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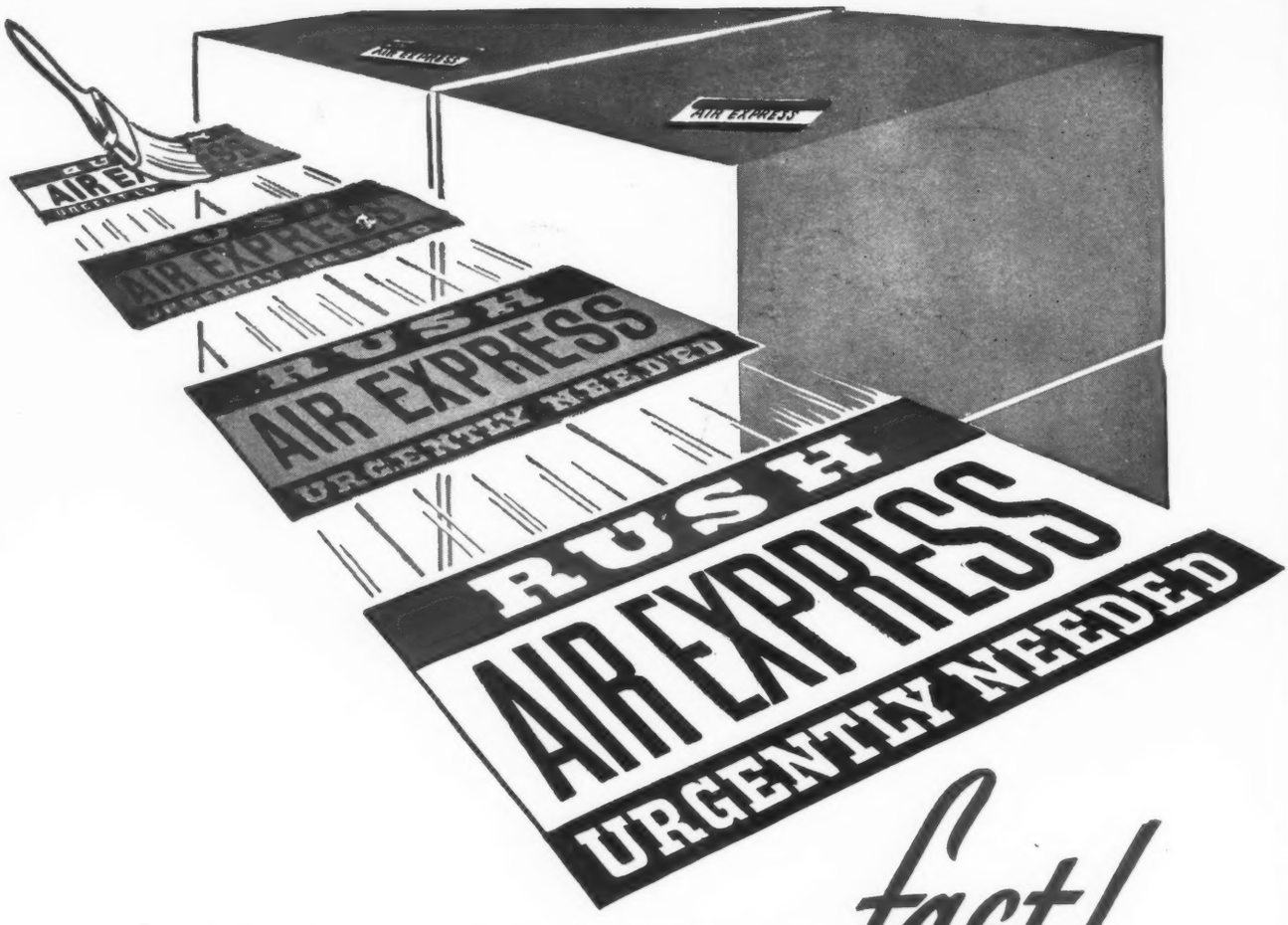
Modern PACKAGING

JANUARY 1947



WHEN AN ADHESIVE MUST DRY *fast!*

Rely on National...with its long practiced, specialized skill ... to provide an adhesive to meet your specific drying speed requirements.

Let's have a look at the drying speed requirements of a wide range of packaging, converting and assembling operations: Carton labeling and over-coating should permit prompt stacking without danger of *locking* . . . to speed shipments . . . protect printed instructions . . . make package appearance a sales asset.

Envelope gum drying speed should keep pace with high speed production and permit immediate nesting for shipment . . . sheet lamination should permit immediate stacking without danger of mildewing . . . package precoating with reactivating and thermo-plastic adhesives should permit immediate folding operations . . . in bookbinding, gluing-off should permit rounding and backing within 20 minutes – instead of the traditional 3 to 4 hours. And all drying speeds should be maintained uniformly in fair weather and foul.

Drying speed, however, is only one of many, very many, properties an adhesive must have to do a specific job. In addition to the factors of surface, application methods and field conditions there must be the final factor of operating safety as insurance against commercial variables.

You can rely on National . . . a specialist in all types of industrial adhesives . . . to give careful attention to every factor of your adhesion problem. Inquire NOW!

Offices: 270 Madison Avenue, New York 16; 3641 So. Washtenaw Avenue, Chicago 32; 735 Battery Street, San Francisco 11, and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto and Montreal. In England: National Adhesives Ltd., Slough Bucks.

National ADHESIVES

EVERY TYPE OF ADHESIVE *FOR EVERY TYPE OF ADHESION*

year in, year out

JANUS, from whom we get the name for the first month of our modern year, was a two-faced god of ancient Roman mythology. Harsh words? No! Please don't confuse his variety of headstrongness with that of some men-of-the-year. Janus was a right sort of guy. He had two faces, not for double-crossing the trustful people who put him in power, but for seeing into the future while looking back upon the past.

Originally a mere god of light and day, Janus served his constituents so well that he was appointed deity of the beginnings and origins of all things. As inventor of arts, industries, and institutions, his name was invoked before all other gods at the start of important undertakings and enterprises. Even so, he still found time to act as custodian of such prosaic things as doorways, gates, and entrances. As doorkeeper of the heavens, Janus was appropriately named guardian over the fortunes of the New Year.

The New Year, like the old years immediately preceding, promises nothing more certain than uncertainty. It may be another year of shortages and disappointing delays. Heaven forbid! It may be a happier and more trouble-free year than you have ever experienced. We sincerely hope so! If we could but invoke the friendly aid of our friendly guardian over the fortunes of the New Year, it would be a simple matter to serve you in the manner to which you were accustomed in the rather distant past. Failing in this, please be assured that we shall serve you, as always: To the utmost limit of our ability, our experience, and our resources.

PHOENIX METAL CAP CO.

2444 W. Sixteenth St., Chicago 8 3720 Fourteenth Ave., Brooklyn 18

Modern PACKAGING

VOLUME 20

NUMBER 5

JANUARY 1947

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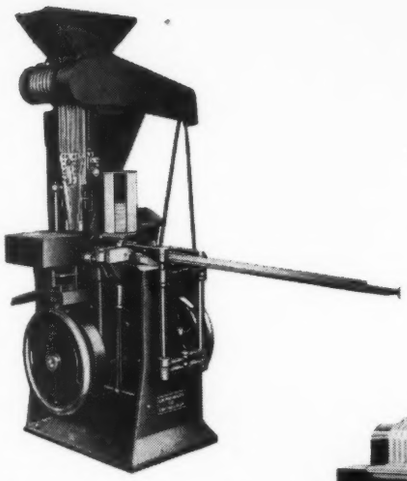
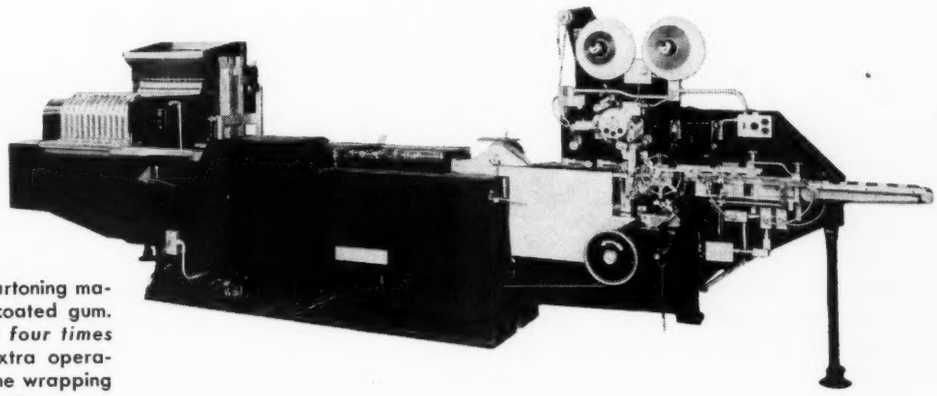
1897-Redington's 50th Year-1947

HALF A CENTURY OF PACKAGING MACHINERY



• Early model cartoner for candy coated gum. Speed: 50 cartons per minute.



• Latest model cartoning machine for candy coated gum. Speed: *three to four times faster:* includes extra operation of Cellophane wrapping with easy opening tape.

FIFTY years ago, packaged goods were a rarity—automatic packaging machinery *almost non-existent* in 1897, the year. F. B. Redington Co. was founded.

Like the first automobiles, the early model packaging machines were *marvels of their age.* For example, machines like the model shown here for cartoning candy coated gum. These machines fed the tablets from a hopper, assembled them, fed the carton from a magazine, expanded it, filled the carton and closed it by tucking end flaps . . . at the then *amazing speed of 50 cartons a minute!*

By today's standards this production was slow, but despite cams, reciprocating motions and complicated design, these *old* Redingtons did their job *so well* that well-known producers of packaged goods continued to buy Redington machines, expecting and always receiving improved models.

Today, with fifty years of experience built into them, Redington packaging machines are *vastly improved.* Cams are gone . . . conveyors move continuously . . . reciprocating motions are reduced . . . shafts turn in self-aligning roller bearings . . . cartons are filled with a smooth, easy motion because of a continuous loading mechanism. *Speeds are higher, efficiency greater.* Cartoning units are built with ingenious attachments such as for Cellophane wrapping and the application of easy opening tape. In addition, vari-speed drives and skip carton mechanism all add up to the *finest packaging equipment built.*

More than 50 years have passed since Frank B. Redington designed his first packaging machine. We look forward to the next half century with *a pledge* that we will continue our efforts to produce even finer equipment . . . so that packaging engineers will *continue to say* "IF IT'S PACKAGING, TRY REDINGTON FIRST."

F. B. REDINGTON CO. (Est. 1897) 110-112 So. Sangamon St., Chicago 7, Ill.

FOR CARTONING • WRAPPING • SPECIAL PACKAGING

REDINGTON

PACKAGING MACHINES

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A NEW FORMAT

LIKE ALL good packagers, we strive constantly to present our product in more attractive, more convenient dress. With this month's issue you will find MODERN PACKAGING completely redesigned—more colorful and, we believe, easier to read and use.

The new format represents the combined talents of several leading package and industrial designers.

▶ The cover proportions and lettering are the work of Gerald Stahl, young New York designer who is rapidly establishing himself in the industrial field.

▶ The inside format, from cover to cover, is based on the recommendations of Egmont Arens, who—once an editor himself—needs no introduction as a package designer.

▶ Finally, the 1947 cover series will form a gallery of the work of 12 distinguished package designers—a package each month, especially designed to meet a specific but hypothetical marketing problem. The series has been worked out to include a wide variety of package materials, products and merchandising ideas. This month and every month, you'll find the story of the "Cover Package" on the first page following our lead article.

In this issue, as is our January custom, you'll find the editorial content pointed toward the general theme of Package Planning for 1947.

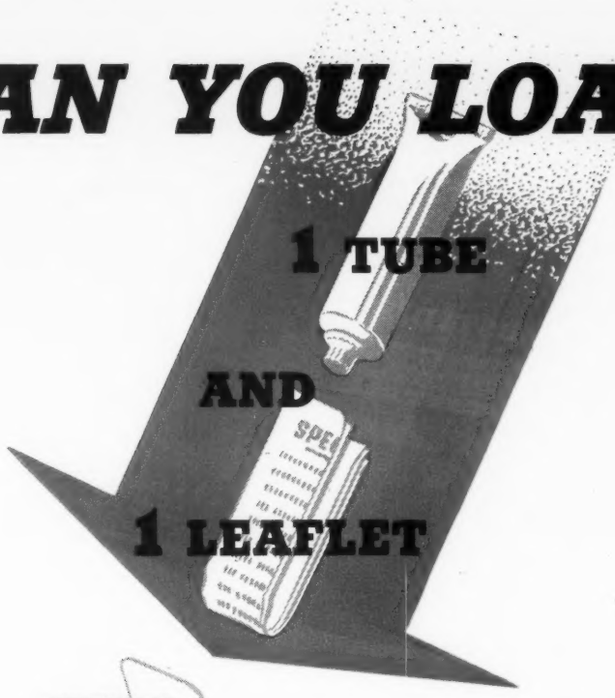
Each month you'll find in *this* space a little talk about the problems, the hopes and the aspirations that are common to all of us in the broad packaging field.

The 1947 model of MODERN PACKAGING is keyed to your interest and convenience. We hope you like it.

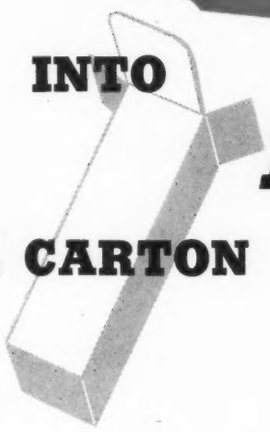
The Editors

Member of Audit Bureau of Circulations

CAN YOU LOAD



INTO



1 CARTON

FOR 169/1000 OF 1¢...

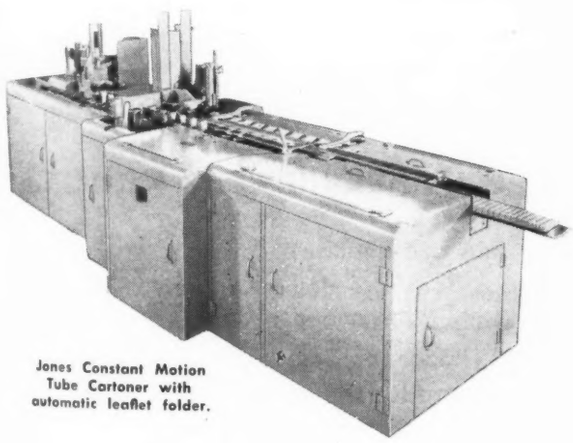
and maintain a steady rate of 8500 perfect packages per hour?

Jones Constant Motion Tube Cartoners feed and fold a leaflet, feed and open the carton, gradually insert leaflet and tube into the carton, close and tuck both carton ends—at an average rate of 8500 or more packages per hour!

These machines reduce unit loading cost to *169 thousandths of one cent* per package — including wages, depreciation, power and maintenance.

Jones Cartoners fold leaflets automatically, precisely. Cost of pre-folding leaflets is eliminated—storage problems are substantially reduced.

Compare Jones Cartoning with your methods—compare costs, too. Write today for complete information, enclosing samples of your product.



Jones Constant Motion Tube Cartoner with automatic leaflet folder.

R. A. JONES & COMPANY, INC.

P. O. Box 485 CINCINNATI, OHIO

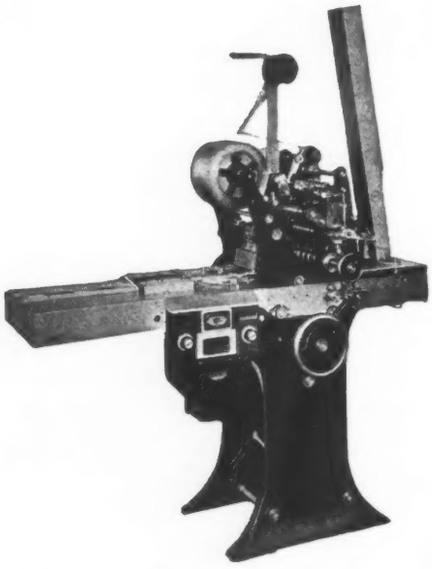
THE MAJORITY OF AMERICA'S CARTONED PRODUCTS ARE JONES CARTONED

High Speed Wraps that Keep Moisture IN or OUT of Packaged Products!

at low cost with Scandia*

Cellophane Wrapping Machines

Scandia machines are designed to provide smooth and foolproof operation at speeds that handle volume production with exceptional economy . . . with or without tear tape attachments.



UP TO 250 PACKAGES PER MINUTE!

Scandia units are available for tight wraps or loose wraps. They are doing excellent work on Candy, Drugs, First Aids, Sundries, Cigars, Cigarettes, Razor Blades, etc. Also on non-symmetrical products such as Baby Goods, Baked Goods, Toys, etc.

Compare facts and you'll want a Scandia!

*Manufactured under Bronander Patents

Scandia MANUFACTURING CO.

NORTH ARLINGTON NEW JERSEY

They look good enough to eat in

Colorful upholstery is another interesting application for GEON polyvinyl raw materials

THOSE handsome dining room chairs are upholstered with a flexible plastic sheet made from one of the GEON polyvinyl resins. Lovely to look at, the upholstery offers many extremely practical advantages, too. Resistance to wear, for example, is just one of a long list that includes resistance to foods, dirt, oils, greases, water, heat, cold, fading, aging, and most other normally destructive factors. The material is easily cleaned with soap and water.

These properties, plus many others, have made versatile GEON the ideal material for literally hundreds of products in the home and in industry —shower curtains and fly swatters— draperies and floor tiles — clothing and luggage — wire insulation and acid tank linings.

And GEON can be pressure or injection molded, extruded, calendered or cast into sheet or film. In solution or latex forms it can be applied as coatings for fabrics and fibres of all kinds as well as for paper and cardboard. Products made from GEON may be flexible or rigid, clear or opaque, brilliantly or delicately colored.

Other raw materials made by B. F. Goodrich Chemical Company include HYCAR American rubber, KRISTON thermosetting resins, and GOOD-RITE brand chemicals. While we make no finished products, we'll be glad to help with special problems or applications. For more information, please write Dept. S-1, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.

B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

GEON polyvinyl materials • HYCAR American rubber • KRISTON thermosetting resins • GOOD-RITE brand chemicals

Cinch a Sale

WITH A

Beetle Plastic Package

Tayton's Technatint Cake containers are molded of BEETLE plastic by the Victor Metal Products Corp.

Take a counter display of colorful BEETLE* plastic cosmetic containers. It's an attention-getter. When a woman stops and picks up one of the packages, she likes the "feel"... the smoothness... the lack of weight. When she opens it, she likes the way it slides open and shut... the way it fits. She's "sold" on the package before she buys, and after.

That's one reason more and more women are saying, "I'll take Tayton." The Tayton Technatint Cake is put up in an attractive BEETLE container. But that's only *one* reason why BEETLE is the packaging choice of the Tayton Company and many other leading cosmetic firms. BEETLE is chemically inert to protect delicate cosmetics. It's strong, yet light. It's the plastic that's *all color in all colors.* Low in cost. Easy to mold.

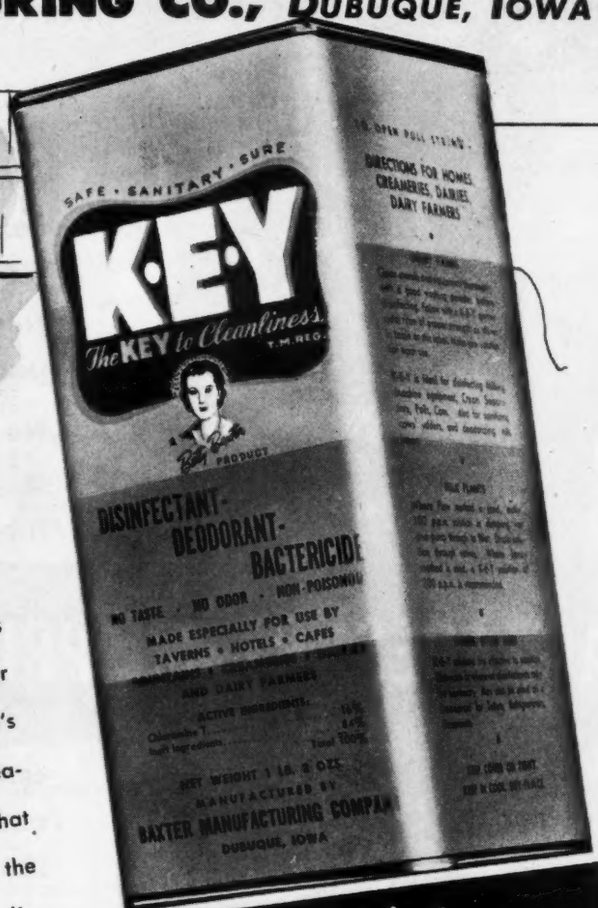
Consult your molder, or ask us, about using BEETLE for your packaging. You'll find it a good salesman for your product. **Reg. U.S. Pat. Off.*

AMERICAN CYANAMID COMPANY
Plastics Division
34B Rockefeller Plaza • New York 20, N. Y.

Cyanamid Plastics
BEETLE* · MELMAC* · MELURAC* · LAMINAC* · URAC*

THE KEY TO SUCCESSFUL SELLING by Sefton

...attention-getting can designed for BAXTER MANUFACTURING CO., DUBUQUE, IOWA...



Yes sir, the right package is the key that will turn your products into sales! Sefton's practical new can for "Key" disinfectant by Baxter Manufacturing Company is literal proof of it! It's Sefton's favorite string-opening can with special features... a telescope container in a square shape that gives it an unusually attractive appearance on the dealer's shelves. It has a full opening for dispensing, can easily be closed again, is factory-sealed and tamper-proof!

Remember, A SEFTON PACKAGE IS YOUR KEY TO SUCCESSFUL SELLING!

Sefton FIBRE CAN COMPANY

ST. LOUIS . . . . NEW ORLEANS

DISTRICT OFFICES: • Los Angeles • San Francisco • Denver • Tampa • Chicago • Des Moines • New Orleans • Boston • Detroit • Kansas City • St. Paul Omaha • New York • Cincinnatti • Cleveland • Oklahoma City • Pittsburgh • Memphis • Nashville • Dallas • Houston • Salt Lake City • Seattle

PACE-SETTING PACKAGES for leading products!

First, in every field, with new, improved, convenient packages—are those wise manufacturers who selected Milprint's wide experience and facilities to develop new sales for their product thru better packaging.

No matter what the problem or product—Milprint's famous designers, artists, laboratory experts and industry engineers can use a wealth of processes, materials and talent to develop your package into a Leader—setting the pace for your competition.

PACKAGES BY MILPRINT | **PACKAGING HEADQUARTERS TO AMERICAN INDUSTRY!**

MILPRINT Inc.

PACKAGING CONVERTERS • PRINTERS • LITHOGRAPHERS

plants at Milwaukee, Philadelphia, Los Angeles, San Francisco Tucson Portland and De Pere

SALES OFFICES IN ALL PRINCIPAL CITIES

Mystery of the Vanishing Vitalis!

What happened, a few years ago, to the Vitalis that was supposed to be in barbers' stand bottles—but wasn't?

Why were sales to barbers falling off when over-all sales of this famous hair preparation were greater than ever?

Faced with these questions, the makers of Vitalis did a little sleuthing. Brought to light the fact that Vitalis bottles were being refilled with substitutes supplied as the real thing.

The plot thickens

Not only were sales being lost, but Vitalis was losing its good name among barbers and their customers.

Something had to be done and we of Sun Tube were called upon to do it. We developed a special, one-shot tube that could neither be re-used nor refilled.

Because it was handy and gave the exact measure, barbers liked it. It guaranteed the genuineness of the product, so customers liked it. And the fact that barber sales *more than doubled* brought no complaints from Vitalis!

Where you fit in

We don't say every packaging problem can be solved so dramatically. (Your product may not be adaptable to the one-shot tube.) We *do* say that our engineers will bring the same ingenuity and resourcefulness to bear on your particular requirements that assured perfect packaging for Vitalis. And for a host of products never before considered prospects for a tube!

Since your product may be among them, why not avail yourself of Sun Tube's information and advice? Just phone or write our nearest representative. Or our main office at 181 Long Avenue, Hillside, N. J.

Sun Tube Corporation

HILLSIDE · NEW JERSEY

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Alexander Seymour
615 Pioneer Building

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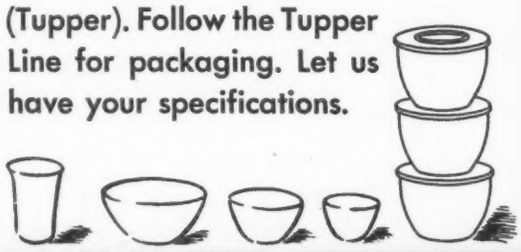
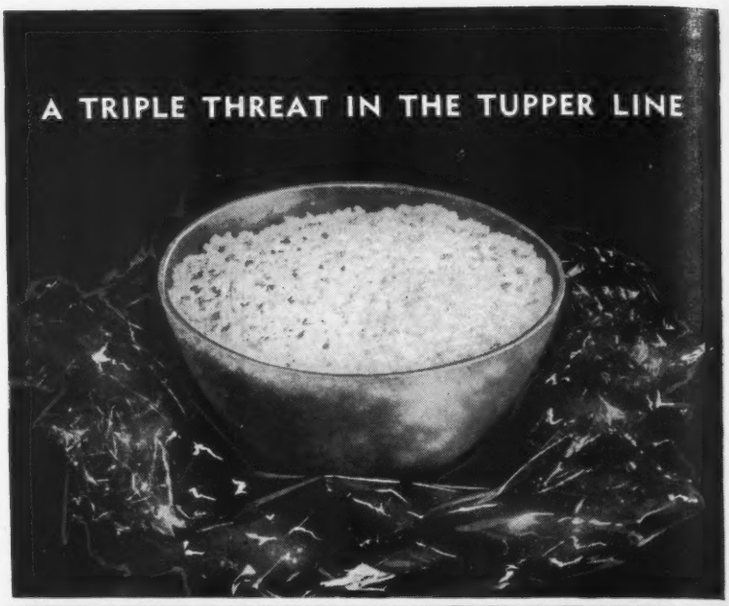
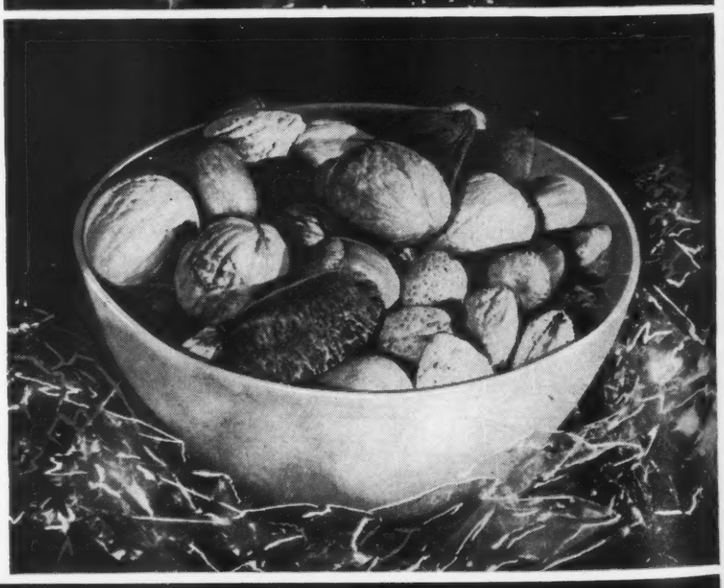
TUPPER

Wonder Bowls FOR *Packaging*

For packaging, Tupper Millionaire Line Wonder-Bowls in colorful, breakproof Poly-T, (trade-mark) the new plastic of the future, are sales boosters of the first order. These latest packaging sensations, in 7", 6¼" and 5½" diameter sizes, are featherweight, tasteless, non toxic and flexible. You can squeeze up the edges and pour from them in pitcher style. In the home, for parties and picnics, at camp and summer places to hold any kind of food or liquid, hot or cold, a Tupper Wonder-Bowl has a thousand re-uses. Wonder-Bowls can be made to order to fit your product to a T (Tupper). Follow the Tupper Line for packaging. Let us have your specifications.







TUPPER PLASTICS, INC., Farnumsville, Mass.

NEW YORK CITY OFFICE: 225 FIFTH AVE. • CAN. ADDRESS: HINDAVID, REG., 916 BLEURY ST., MONTREAL, P. Q.

FOIL CARTONS

REFLECT LIGHT
ATTRACT ATTENTION
PROTECT CONTENTS

SELL YOUR PRODUCT FASTER

UNITED PAPERBOARD

Foil reflects more light, attracts more eyes, sells more goods. That's why foil cartons are a highly profitable investment. • Their outstanding display value pays dividends in point-of-sale advertising. • As silent salesmen they reduce costs and increase volume. • Let us show you how United foil cartons can bring you greater profits.

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Carton Plants:
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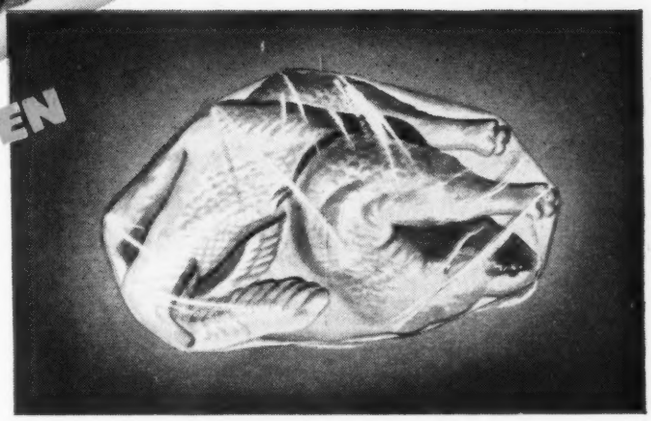
FROM PULP TO PACKAGE

That attractive calendar from "Matthias," so useful on the desk, in the office or at home, has again been sent to everyone on our mailing list. A few extras are available for those who want another for their best girl. Purpose of this calendar is to remind you during every day of 1947 that packaging paper problems can properly be sent to "Matthias Paper" who now, as for many years past, have most of the answers. And during 1947 every firm on our mailing list will assuredly receive many new up-to-the-minute sample books, and much valuable information on packaging papers. If you're not "on," and you buy or specify packaging paper, we'll put you on that list at your request. MATTHIAS PAPER CORP., 165 W. Berks St., Philadelphia 22, Penna. New England address—Box 127, Wellesley, Mass., Southern Branch—Guilford Building, Greensboro, N. C.

Primer of Perfect Protection

P is for FRESH Potato Chips

kept crisp, snappy
and delicious from
vat to consumer



—and for FROZEN Poultry

with that spring-broiler taste
the year round

SOON you'll be adding new taste magic to many foods — fresh and frozen — because you'll be marketing them flavor-sealed in **PLIOFILM.** ★ You see, this sheer and shimmering packaging material is both air- and moisture-proof. It keeps in juice-rich goodness, or keeps out moisture — with equal ease. ★ It protects coffee and tobacco against flavor loss, fruits and vegetables from desiccation, sensitive machinery from corrosion. ★ Or meats, berries and sea foods can be frozen for months without impairment of market-fresh taste and looks, because **PLIOFILM** prevents "freezer burn," dehydration and shrinkage. ★ Many laboratory tests have proved these facts — and manufacturers can soon confirm them. For **PLIOFILM** is on its way back, to provide packaging that combines eye-catching appeal with matchless quality-protection. Goodyear, Chemical Products Division, Pliofilm Dept., Akron 16, Ohio.

Pliofilm—T.M. The Goodyear Tire & Rubber Company

Pliofilm

A PRODUCT OF

GOODYEAR

RESEARCH

SEE TOMORROW'S PACKAGING MARVELS NOW!
Don't miss the Pliofilm show, Booth 204, at the Atlantic City Packaging Exposition, April 2—5.

MAKE *your own* BAGS

Silex Coffee Bag

WITH THE SHUMANN BAG MACHINE
(formerly WRAP-ADE)

★ USED SUCCESSFULLY BY COMMERCIAL BAG MANUFACTURERS FOR 15 YEARS
★ DESIGNED AND BUILT BY A COMMERCIAL BAG MANUFACTURER
★ NOW AVAILABLE TO ALL BAG USERS

Today all packagers can enjoy the benefits of a commercial-type bag machine. Mass production facilities have brought the cost of the SHUMANN Automatic to little more than the price of an ordinary, light-weight machine.

The SHUMANN Automatic is heavily constructed, for years of trouble-free use. It operates continuously, with minimum attention, without breakdowns, without waste. It makes up to 5000 flat or gusset bags per hour, in the exact size you need. Features CRIMP-SEAL bottom bags that are absolutely moisture-proof and sift-proof . . . uses any heat-sealing material such as Diaphane, Cellophane, Pliofilm, Coated Glassine, or Foil.

Designed, built and proved by a commercial bag manufacturer. Make your own bags efficiently and at minimum expense with the SHUMANN Automatic Bag Machine. Write for full information.

ELECTRONIC *Control*

Photo-electric eye keeps printing centered for perfect register. It's your guarantee against waste — every bag is perfect.

SHUMANN
EQUIPMENT COMPANY

1206 E. Carson St. **Pittsburgh 3, Pa.**

EVERYTHING IN PACKAGING

DON'T TELL *Max Factor* THERE'S NO SANTA CLAUS!

because the *Max Factor–Hollywood* Christmas Package makes Max Factor Christmas Sales something to wonder at.

This is the attractive red and gold Max Factor Gift Package, by Ritchie. It effectively contains, displays and glamorizes Max Factor products.

NEVER UNDERESTIMATE THE POWER OF THE PACKAGE!

W.C. Ritchie and COMPANY
8840 Baltimore Avenue, Chicago 17
★ SET-UP PAPER BOXES
★ FIBRE CANS
★ TRANSPARENT PACKAGES

COPYRIGHT W.C. RITCHIE & CO.

WAY TO INCREASED SALES. Let Ritchie help you develop a better package at low unit cost. A practical, production-planned package that instantly identifies, fully protects and conveniently dispenses your product. Easy to fill or pack—to handle, to display—but above all an attractive *SELLING* package.

New York • Detroit • Los Angeles • St. Louis • Minneapolis • Milwaukee
Atlanta • New Orleans • Denver • Portland • Seattle • Miami

HOW CAN YOU TELL THE AGE OF A SALMON?

That was an easy question for the library of American Can Laboratories at Maywood, Illinois.

We explained that you simply put one scale from the fish under the microscope.

Just as a tree trunk shows its age through a series of rings—so does the salmon scale. And you can also tell the length of time the fish has been in salt or fresh water.

Some of the questions aren't so easy:

"How is micro-crystalline wax prepared" . . . "what is a self-heating can" . . . "will you supply us with a complete bibliography on DDT?"

We answered them all—here in the largest and most complete library of its kind in the world.

And that isn't all we do. We receive 160 scientific and trade journals each month. A scientific staff prepares abstracts of all current technical literature and of new patents which are of interest or value to our customers. And these abstracts go out each week to twenty-five states and seven foreign countries.

Solving problems for the industry

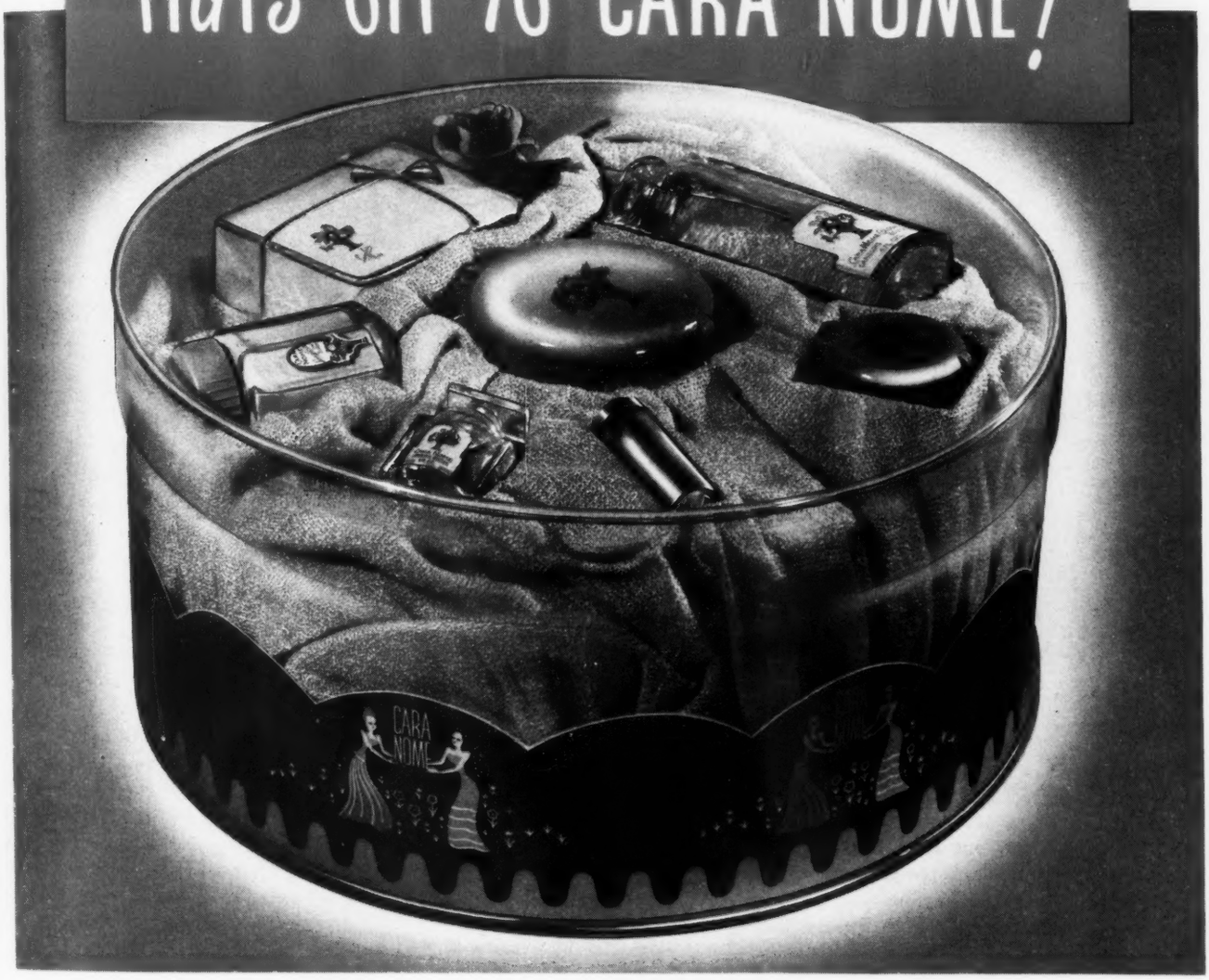
But the library's greatest value is that it can quickly tell exactly what research has already been done on a given subject—and our workers pick up the problem from there and carry on—saving days, or sometimes weeks, for the industry.

The library is only one small facet of our many-sided research. And research is only one of the many types of broader helps we offer our customers. Ask our representative to explain them all when he calls. Or write to:

AMERICAN CAN COMPANY (CANCO) NEW YORK · CHICAGO · SAN FRANCISCO

NO OTHER CONTAINER PROTECTS LIKE THE CAN

Hats off to CARA NOME!



In a handsome transparent hat box, Cara Nome's cosmetics get the nod of approval from holiday gift-buyers. United Rexall Drug not only cashes in on the display value of crystal clear acetate, but also gives the customer a package that is most desirable for re-use.

Let Shaw-Randall ingenuity put extra selling power in your containers.

SHAW-RANDALL CO.

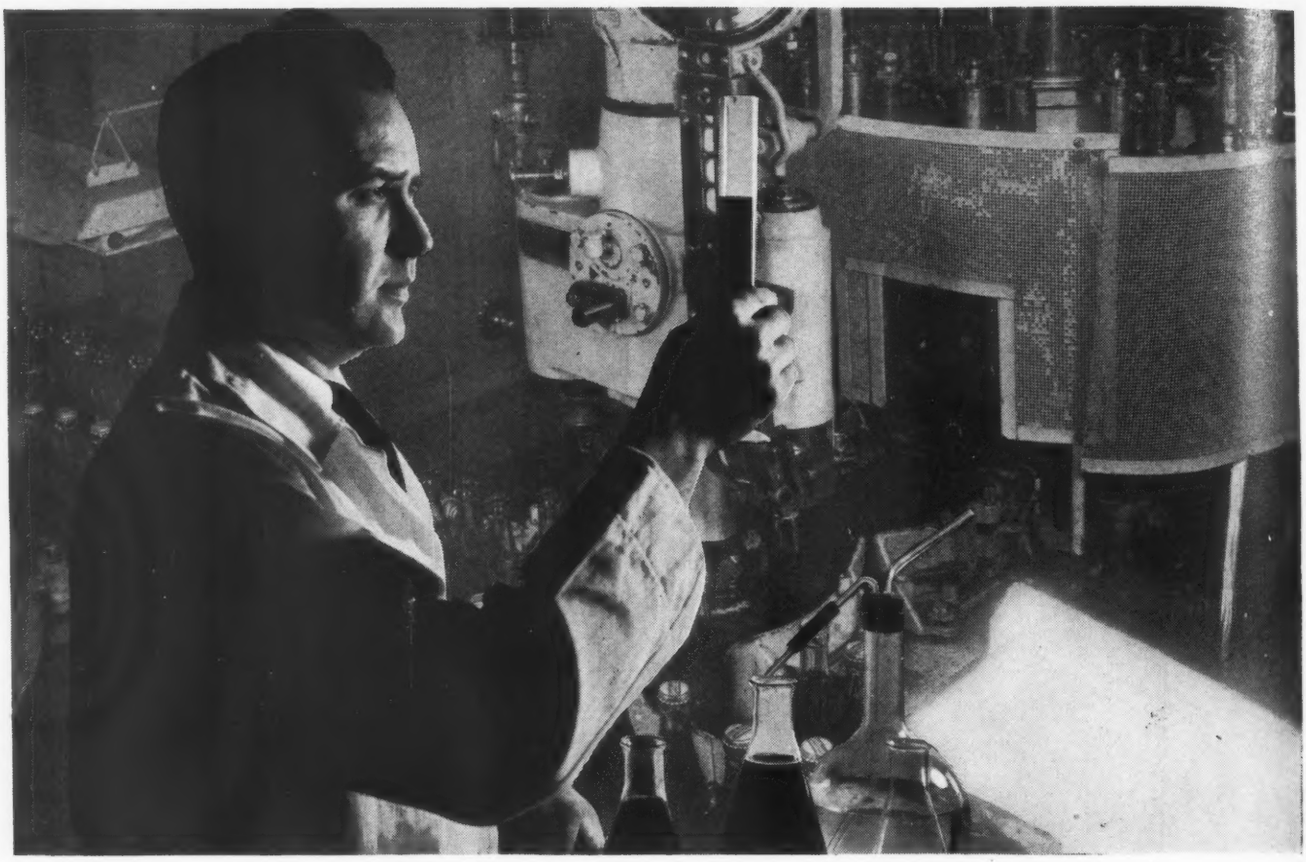
DESIGNERS and CREATORS of VISIBLE PACKAGES

PAWTUCKET • RHODE ISLAND

A DIVISION OF SHAW PAPER BOX COMPANY

SALES REPRESENTATIVES

Fred Mann & Co., New York — H. B. W. Snelling, Boston — L. T. Swallow & Associates, Detroit



HOW DISSOLVING A SPECK SOLVED A GLASS PACKAGING PROBLEM

Not so long ago, one of Armstrong's customers complained that small black specks were showing up in his packaged product. His product was manufactured under unusually rigid controls and filtered before bottling. So naturally he figured that either the bottle or the closure must be the source of the impurity.

However, careful checking at the Armstrong plant quickly eliminated the bottle itself as a possible source. Since no black material was found in or near the shipping containers, outside dirt was ruled out. The closure liners were white, so they couldn't be guilty. But the closure itself was a black molded cap. Could it be the culprit?

Analysis of the black specks by Armstrong's laboratories said no. The cap material wouldn't dissolve in carbon tetrachloride. But the specks did!

Convinced by Armstrong research that neither the caps nor the bottles could be causing the impurity, the customer tore down his bottling machinery. He discovered that the black specks were dropping from a worn-out gasket high up in one of the filling heads!

Not all glass packaging problems are so difficult to track down as this one was. Nor do all of them originate in customers' factories! Whatever your problem, and no matter where it originates, you can be sure of getting the finest technical assistance at Armstrong. An unusually large staff of experts in engineering, production service, package design, and the pure and applied sciences is constantly on the job to make sure you get the best in glass and closure service.

For full information on any of Armstrong's glass or closures, or assistance with your packaging problems, call your Armstrong representative. Or write direct to Armstrong Cork Company, Glass and Closure Division, 5901 Prince Street, Lancaster, Penna.

Sparkling SALES APPEAL

Crystal-clear View Pac containers made to fit your product lend sparkling sales appeal. Plain transparent or printed in full color to feature your name, slogan, trade mark, they emphasize the finer qualities of your merchandise . . . protect its freshness . . . enhance its sales value.

KELLOGG designers, with years of experience in solving packaging problems, stand ready to assist you.

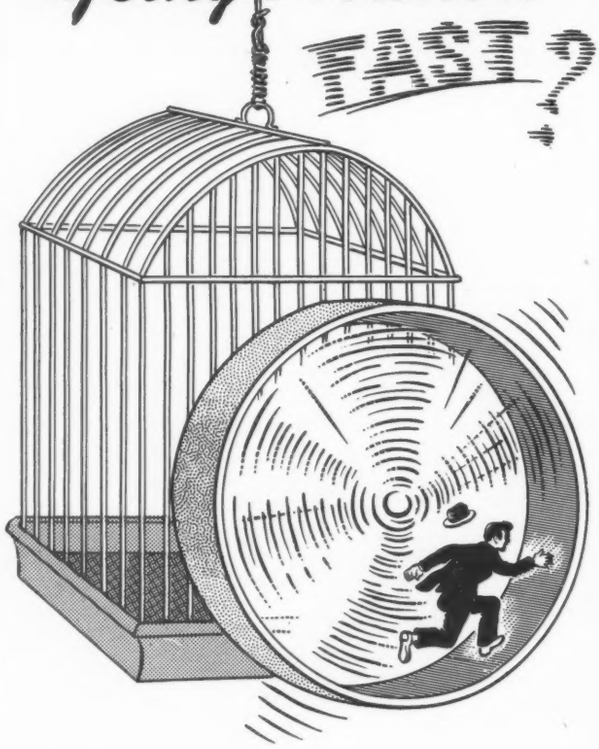
P-71

To enable our designers to consider your specific problem efficiently, please send us the actual merchandise you wish to package. Your product will be returned to you in a View Pac, specially designed to meet your requirements.

View Pac
RIGID TRANSPARENT CONTAINER

KELLOGG CONTAINER DIVISION
Division of United States Envelope Company
SPRINGFIELD 2, MASSACHUSETTS

Going Nowhere FAST?



We LIKE Problems on

INJECTION & EXTRUSION MOLDING

For a good many years we have offered a little *extra* service in research and consultation on Thermoplastic Molding problems that were "a little different"—and have shown ingenuity and economy in fabricating that should earn your confidence.

WEST COAST REPRESENTATIVE:
Container Service Co.
1266 Northwestern Ave.
Los Angeles 27, Cal.

CANADIAN REPRESENTATIVE:
Plastic Supply Co.
University Tower
Montreal 2, Quebec

EXPORT REPRESENTATIVE:
C. Civita & Company
2 West 45th St.
New York, N. Y.

INJECTION: Parts or products, intricate or not; up to 22 ounces per shot.

EXTRUSION: Standard or special shapes, rigid or flexible, made for many varied uses.

Write to INJECTION & EXTRUSION DIVISION

CONTAINERS THAT SHOW THINGS, AND SAY

Clearsite*

*Reg. U. S. Pat. Off.

is essential to products that *sell when they're seen*—but shouldn't be handled . . .

Such items as fine tools or machine parts, instrument parts, baby goods, hygienic or dental supplies, products for personal use need the double protection, and the display value of CLEARSITE containers.

TRANSPARENT . . . SHATTERPROOF . . . SEAMLESS . . . FEATHERLITE . . . *with labeling imprinted during manufacturing process.*

Get FACTS! See for yourself!
Write to CONTAINER DIVISION

CELLUPLASTIC CORPORATION

PLASTIC CONTAINERS
AND
PLASTIC PRODUCTS

50 AVENUE L · NEWARK 5, N. J.
NEW YORK OFFICE—630 FIFTH AVENUE

A PRODUCT IS KNOWN BY THE BOX IT KEEPS

. . . and packaging preferences definitely show trends for better boxed merchandise. Eighty percent of the people who influence the sales of the top twenty-one industries of the country all state unqualified preference for set-up boxes. This preference is based on cold, hard sales facts. It's easier to sell your product if packaged in a set-up box. Investigate today possibilities of advantageously selling your products in set-up containers which will give you greater versatility for less money than any competitive container.

Write today to Dept. No. 96, National Paper Box Manufacturers Association, Liberty Trust Building, Philadelphia 7, Pennsylvania, for the name of your nearest set-up box manufacturer. He will be glad to assist you in your packaging plans for the future.

FOR INFORMATION OR SERVICE • CONSULT YOUR NEAREST SET-UP BOX MANUFACTURER

NATIONAL PAPER BOX MANUFACTURERS
Association
AND COOPERATING SUPPLIERS
Liberty Trust Building • Philadelphia 7, Penn.

"We can depend on your adhesives..."

In the making of set-up paper boxes, the strength – and even the appearance–of the finished product can be affected by the choice of adhesives. The F. J. Schleicher Paper Box Co. of St. Louis–some of whose attractive "Masterbuilt" boxes are pictured here–made their choice . . . Arabol.

That they are satisfied with this decision is evident from their statement: "We have been using Arabol for years and it always does the job. We can depend on your adhesives to help us produce quality boxes."

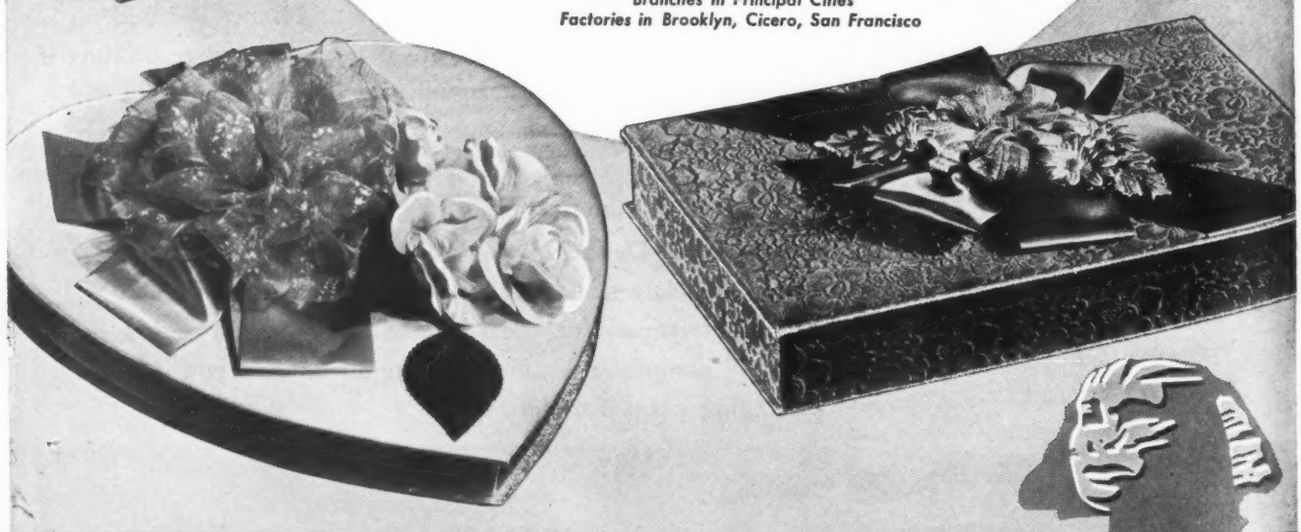
For more than 60 years we have provided specific adhesives to handle specific tasks. Today we serve the leaders in a hundred industries. Consult us and put the knowledge gained from this specialized experience to work for you. Whatever your adhesives problems, the technicians in our laboratories are equipped to help you find the solution. See the Arabol Representative when he calls; he knows adhesives.

THE ARABOL MANUFACTURING CO.

Executive Offices: **110 East 42nd St., New York 17, N. Y.**

CHICAGO—54th Ave. & 18th St. • SAN FRANCISCO—30 Sterling St.

Branches in Principal Cities
Factories in Brooklyn, Cicero, San Francisco



Adhesives?... **ARABOL!**

Take these scales

into your packaging conference

When you sit down to discuss packaging, you'll have three factors to weigh . . . merchandising value . . . protection effectiveness . . . and cost.

At every stage of the discussion, you'll find Du Pont Cellophane measures up to today's packaging needs.

Its *transparency* makes your product its own best salesman, always on the job to turn a shopper's glance into an impulse sale.

The 56 types of Du Pont transparent films are chemically tailored to provide the sanitary, moistureproof *protection* that meets the requirements of a wide variety of products.

What's more, Du Pont Cellophane gives you this transparent protection at *lowest cost*. It provides a *balanced* package.

There's still not enough Du Pont Cellophane to satisfy everybody, but we hope the day will soon come when our converters and ourselves can again meet all needs.

E. I. du Pont de Nemours & Co. (Inc.), Cellophane Division, Wilmington 98, Delaware.

DU PONT
REG. U. S. PAT. OFF.

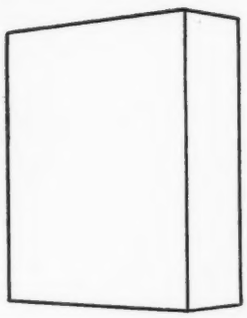
Cellophane

Shows what it Protects—at Low Cost

BETTER THINGS FOR BETTER LIVING
. . . *THROUGH CHEMISTRY*

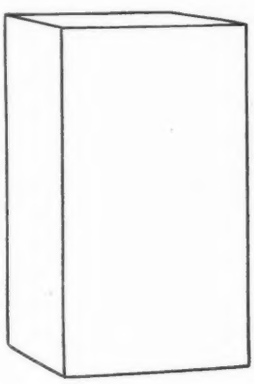
MORE EYES

Whiter. Brighter. Takes inks brilliantly. Coated Lithwite's smooth chalk-free surface takes plate impressions uniformly, brings up colors vividly. Rub-resisting. Fade-resisting. Easier to glue. Performance-proved for 8 years.



REACH FOR YOUR PRODUCT IN CARTONS OF COATED LITHWITE*

...THE QUALITY CLAY-COATED PAPERBOARD



Eye-catching quality on the shelf! Smart, crisp *clay-coated* cartons with "reach-for-me" brilliance! It's *Coated* Lithwite that has made such packages *practical* for mass merchandisers. Performance-proved for 8 years. *Coated* Lithwite is the revolutionary clay-coated paperboard that is made in *one* straight-through operation. Today, *Coated* Lithwite, together with Gardner-Richardson carton craftsmanship, is responsible for the eye-catching plus of millions of stand-out packages on retail shelves. While production is currently sold up, it is not a day too soon to investigate *Coated* Lithwite as a practical means of up-grading your cartons.

A product of THE GARDNER-RICHARDSON CO.

Manufacturers of Folding Cartons and Boxboard, Middletown, Ohio

*Reg. U.S. Pat. Off.

Sales Representatives in Boston, Chicago, Detroit, New York, Philadelphia, Pittsburgh, St. Louis.

GO ON AN EASTER SELLING SPREE

IN KUPFER NOVELTY PAPERS

FOIL AND METALLIC PAPERS • LACE PATTERNS
LEATHER SIMULATIONS • FLORAL PRINTS
TRADE-MARKED PAPERS • OVER 5000 OTHER PAPERS

Plan your Easter packaging NOW with Kupfer papers, refreshingly new and appropriate for the entire spring season. Colorful, stimulating printed or embossed papers, exclusively Kupfer's, are ready for selection for box coverings, linings, package wraps, labels, etc. If desired, Kupfer packaging specialists will create a paper for your specific needs.

COLOR SELLS

KUPFER BROS. CO. 4 ASTOR PL. NEW YORK 3, N. Y.

Manufacturers of Surface Coated Papers Since 1845

KUPFER BROS. PAPER CO.
145 West Hubbard Street
Chicago 10
Illinois

Southwest Representatives:
MODERN PACKAGINGS
Irwin-Keasler Building
Dallas 1, Texas

FRYE PAPER COMPANY
1510 Santa Fe Avenue
Los Angeles 21
California

Branches in:
BOSTON • RICHMOND
PHILADELPHIA
SEATTLE
SAN FRANCISCO

GOOD NEWS SHOULD TRAVEL FAST....

mrm now makes it practical for all manufacturers to own a fully automatic rotary filler, made with **mrm** simplicity and efficiency. All will welcome this versatile machine because 1) It is fully automatic in operation, 2) It fills varied liquids, container types, and sizes, 3) It is economical in cost, operation, maintenance. It pays for itself!

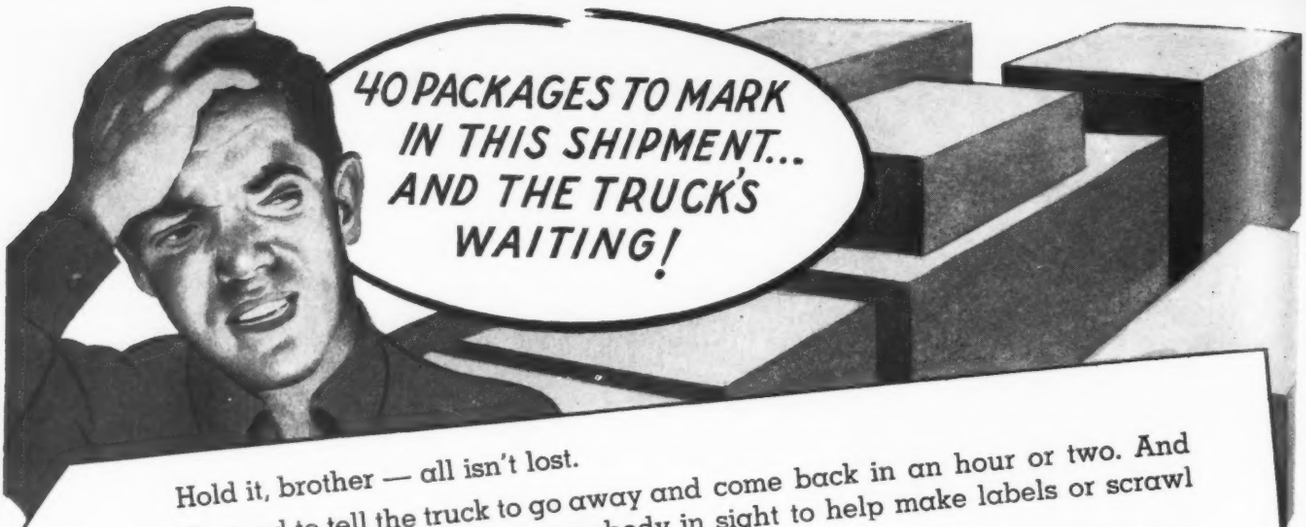
the NEW mrm
FULLY AUTOMATIC
ROTARY
VACUUM FILLING MACHINE
Fills • Thin • Foamy • Viscous Liquids

OPERATING SPEEDS
60 quarts per minute
80 pints per minute
(smaller containers with proportionate increases in speed)

PROMPT DELIVERY
• Fully Automatic: Fills 1 oz. to 1 qt.
• 12 Dripless Spouts.
• Spouts Adapt to Container Variations.
• Fully Automatic Overflow, No Waste.
• Stainless Steel Contact Parts.
• Easy-to-Adjust Variable Speed Drive.
• Rapid Change-Over for New Containers.
• Automatic Intake & Discharge Conveyer.

LET mrm "VISUALIZE" YOUR FILLING MACHINE!

mrm company
CUSTOM DESIGNED & BUILT FILLERS, CAPPERS, CONVEYORS
223 EAST 106th STREET • NEW YORK 29, N. Y. • LEhigh 4-0207-8



Hold it, brother — all isn't lost.

No need to tell the truck to go away and come back in an hour or two. And you don't have to call out everybody in sight to help make labels or scrawl the address on those boxes.

You can address them—by yourself—just as fast as you can go from box to box with the portable MULTISTAMP Duplicator. For MULTISTAMP works that fast. It prints on practically anything, too—wood, shipping tags, labels, cardboard, paper . . . you name it. On big and small packages alike . . . in hard-to-reach corners and normally inaccessible spots. And MULTISTAMP never makes a mistake!

Non-mechanical . . . no type to set. Just type or write on the stencil, snap it on the MULTISTAMP — and print! Like one-two-three, the job's done. MULTISTAMP has been giving dependable service for over 25 years.

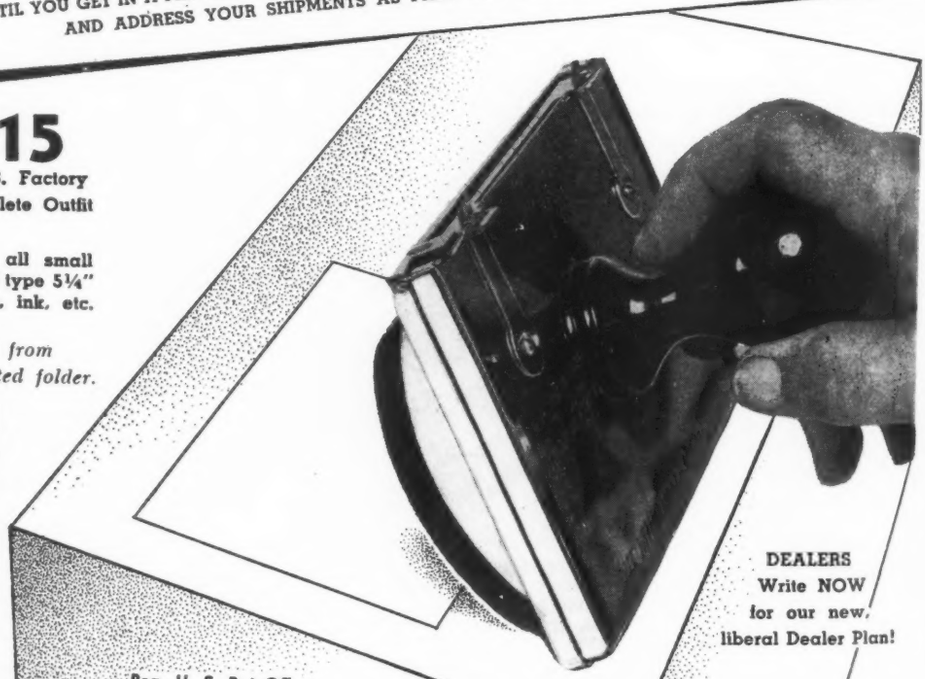
DON'T WAIT UNTIL YOU GET IN A FIX LIKE OUR FRIEND ABOVE IS IN. ORDER YOUR MULTSTAMP OUTFIT NOW— AND ADDRESS YOUR SHIPMENTS AS FAST AS THEY'RE PACKED.

NO. 3 MULTISTAMP OUTFIT PRINTS ON BOXES, CARTONS, SHIPPING TAGS, LABELS, Etc.

$15
F.O.B. Factory Complete Outfit

Also ideal for postcards, notices, all small printing jobs. Prints up to 19 lines of type 5¼" wide. Complete with case, stencils, ink, etc. Weight, 4 lbs. Guaranteed 5 years.

Other MULTISTAMP outfits from $7.50 to $82.50. Write for illustrated folder.



DEALERS Write NOW for our new, liberal Dealer Plan!

Reg. U. S. Pat Off.

MULTISTAMP
STENCIL DUPLICATOR

MANUFACTURED ONLY BY THE MULTISTAMP CO., INC. NORFOLK, VIRGINIA

*A Treasured Container**

for extra profits

*A Frank Medico "Ejector Holder" encased in an **Arnrus** Plastic Pouch*

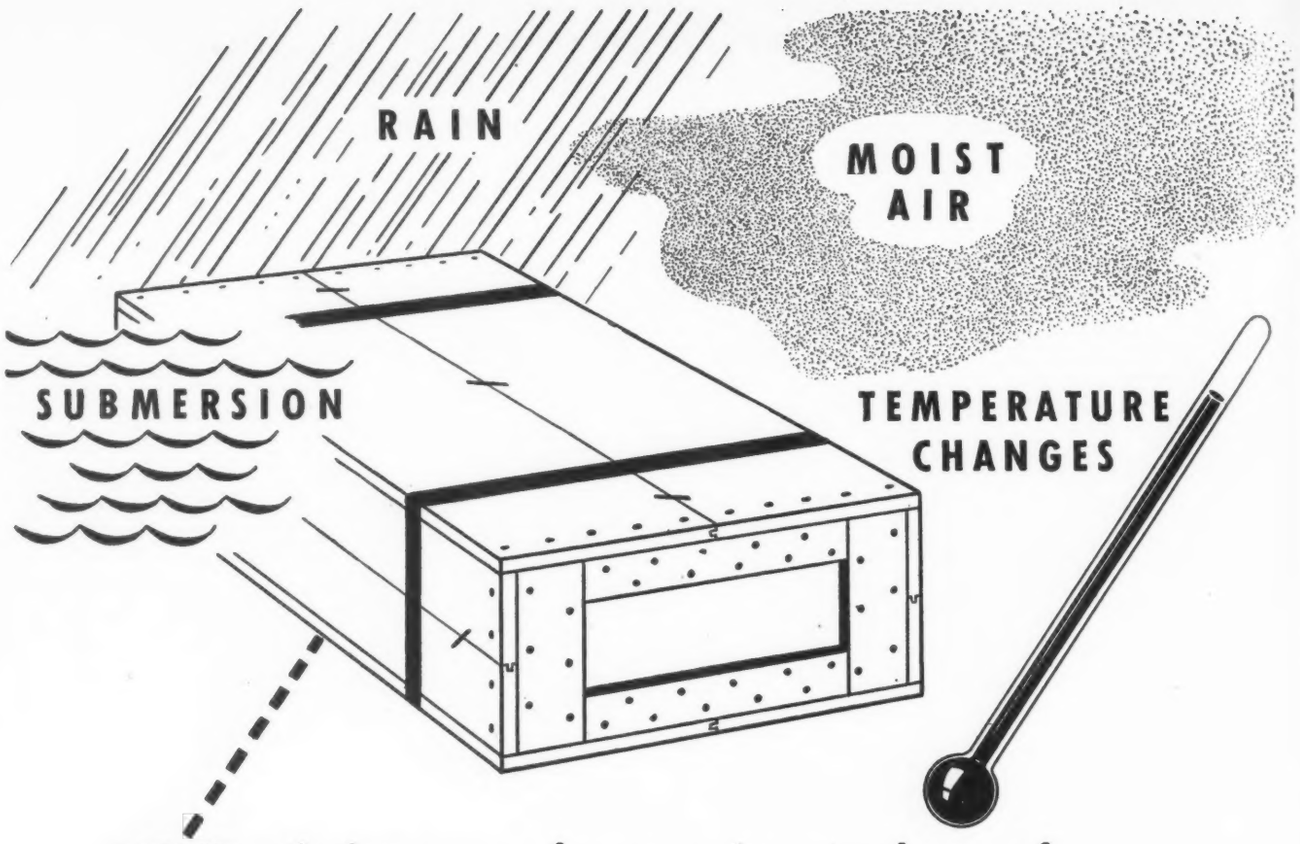
* it's an

Arnrus Plastic Pouch

Familiar *everywhere* is the Frank Medico "Ejector Holder." And unique is the Medico method of getting added attention by encasing the holder in a transparent plastic pouch . . . by ***Arnrus.***

Fashioned from pure Vinyl Plastic Film, this transparent pouch focuses attention . . . and says in *total* effect: Here is a product whose qualities demand distinctive packaging and protection. And here, moreover, is permanent protection to keep your cigarette holder fresh, clean, sanitary!

Arnrus can fit your product, too, with captivating transparent plastic packaging. ***Arnrus*** Plastic Containers build big profits for big markets. Write today!



NONE *of these can harm your products if packed in a case lined with* AQUASTOP

PROTECTION of mechanical products from damage by corrosion, mold or fungus is adequately provided by AQUASTOP, the waterproof packing case liner that can be used as box panels or as heat-sealed envelopes.

Cases of polished metal parts protected with AQUASTOP were completely submerged for several weeks without altering in any way the protective qualities of this amazingly efficient material. The parts had the same bright untarnished surfaces when taken from the cases as they had when packed.

Severe tests like this emphasize the extra margin of safety inherent in AQUASTOP for protection from damage by corrosion, mold or fungus.

Use of AQUASTOP provides a "breathing package" with an MVT rate as high as 10 grams per 100 square inches per 24 hours, preventing damage by condensation within the package due to temperature changes.

Furnished in several forms to your size specifications—box panels, envelopes or pre-fabricated bags—this material can simplify your packaging operations and help reduce damage claims.

Regardless of the type of product you make or sell—or whether you ship your products by air, water or ground transportation there is an application of AQUASTOP to meet your needs.

TECHNICAL DATA

No cracking
No tackiness
No flow
No loss of flexibility

The seal is as strong as the material itself.

Retains waterproofness

"Breathes" a minimum of 5 grams per 100 sq. in. per 24 hours

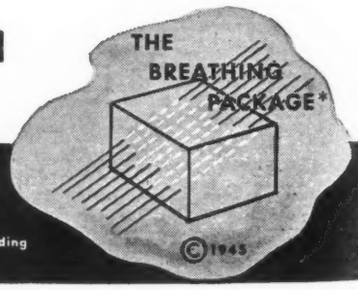
Withstands minimum hydrostatic pressure of 40 lbs. per sq. in.

Send for descriptive data sheets.

PROTECTIVE COATINGS CORPORATION

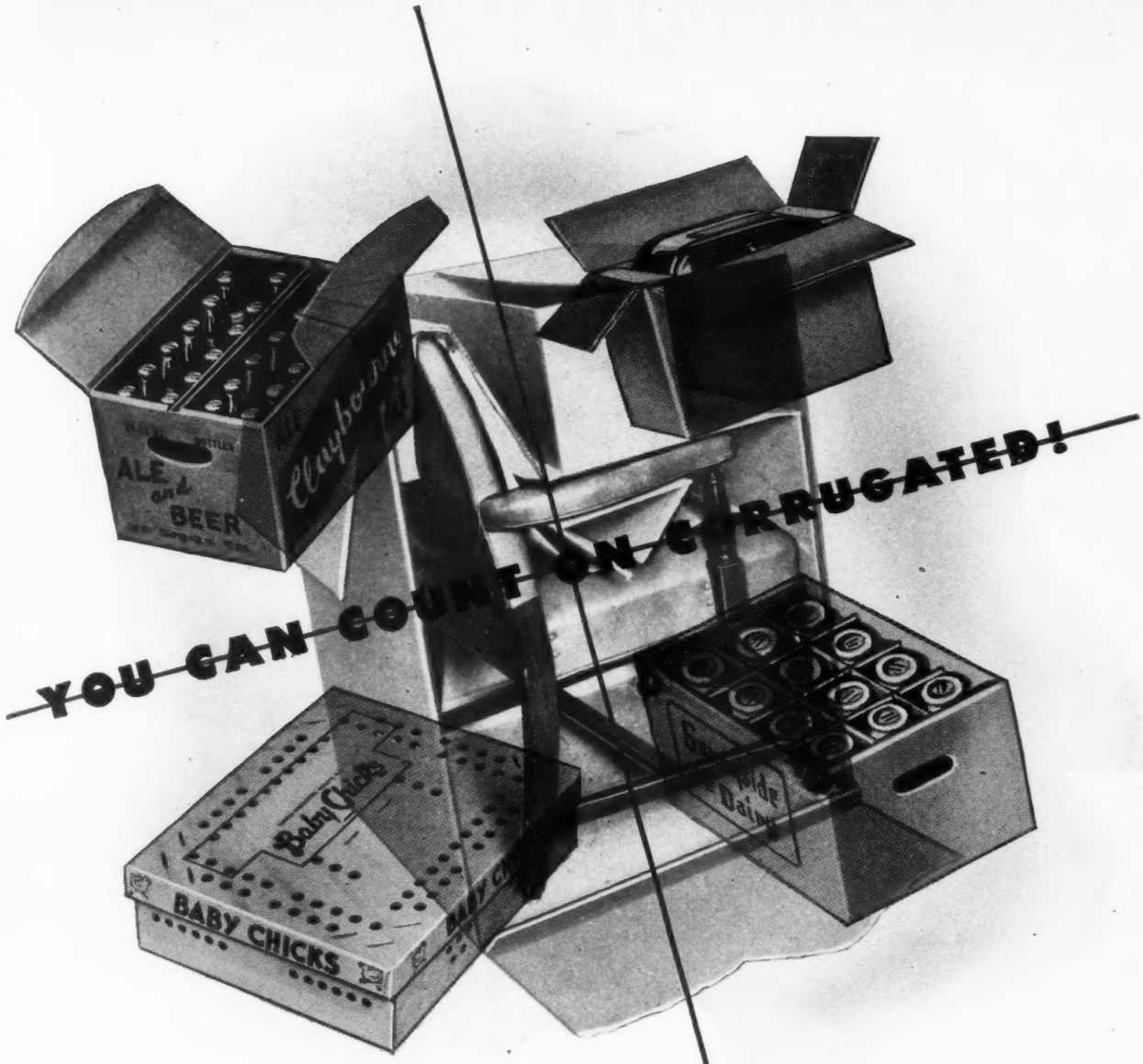
Manufacturers and Consultants

681 Main Street • Belleville 9, N. J.



AQUASTOP

*Pat. Pending



THERE'S a reason, and a good one, why corrugated containers carry so much of the nation's commerce. It's the perfect protection they afford products, whether large or small, heavy or light, that creates such a demand. Light in weight, they are sturdy enough to stand the stress and strain of shipping.

For furniture or fruit, tobacco or toys, the corrugated container is durable and dependable. Old Dominion offers the advantage of engineering experience in the corrugated field . . . its own printing plant . . . and a specially devised system of identity markings. Consult us on your corrugated problems.

Write today for completely illustrated Corrugated Carton Folder, to Old Dominion Box Company, Inc., Dept. 43, Charlotte, North Carolina.

OLD DOMINION *Box Company Inc.*

PLANTS LOCATED THROUGHOUT THE SOUTH
NEW YORK REPRESENTATIVE
228 EAST 45th ST., NEW YORK 17, N. Y.
Phone MUrray Hill 2-6492

CHARLOTTE • N. CAROLINA

PRECISION BUILT PAPER BOXES AND PACKAGING MATERIAL

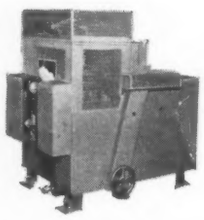
THE NEW WALDORF FROZEN FOOD PACKAG

PACKAGE AND PACKAGING METHOD PATENTS PENDI

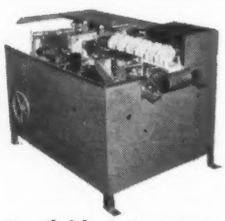
Used by leading frozen food producers . . . Locks up firmly . . . Pre-lined with DuPont Cellophane . . . Requires no over-wrap . . . The liner is next to the product, where it belongs . . . Assembles automatically . . . A development of Waldorf Research to which this trade-mark is proudly affixed.

WALDORF PAPER PRODUCTS COMPANY

SAINT PAUL 4, MINNESOTA



Palmer Automatic Carton Former (Stack Fed). Production speed 80 per minute.



Palmer Automatic Carton Closer. Production speed 80 per minute.

Manually F Carton Former. duction speed u 35 per minute.

Available In Institutional And Retail Sizes

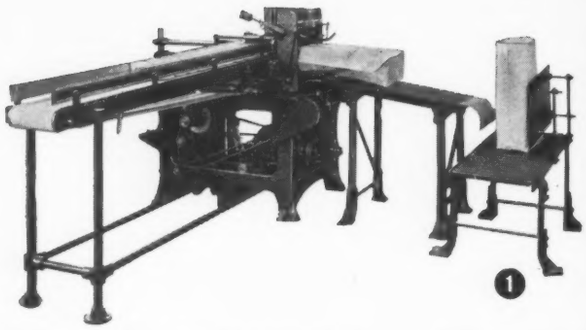
labels speak louder than words...
see Monsanto about
HEAT SEALING LABELS
that say more

Your label says a lot . . . does a big selling job . . . when it's neatly applied and stays right where you want it on your package. You can be sure of all that when you use Monsanto heat sealing for labels.

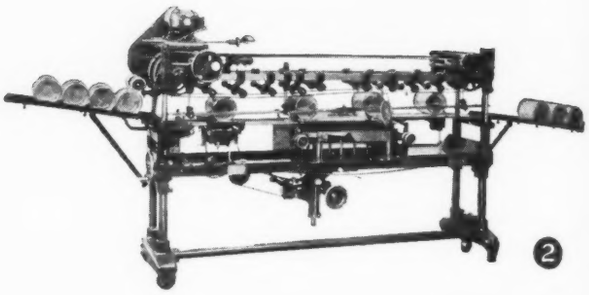
Efficient heat sealing for labels is the latest development of Monsanto's plastic packaging research. A special plastics coating is used to make your label hang on to any surface—cellophane, waxed paper, acetate, foil or textiles. And it does the job neatly and effectively.

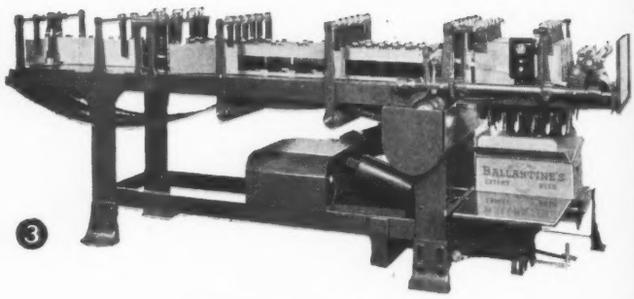
Because Monsanto heat sealed labels are quickly and cleanly applied wherever you want them, your package looks better . . . says all you want it to by its neat, clean appearance. Heat sealing labels are quickly changed on the labeling machine for easy coding and dating . . . they offer every opportunity for colorful, salesmaking design.

Ask your label supplier for information about Monsanto heat sealing for your labels. Or write direct to MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield 2, Massachusetts. In Canada, Monsanto Ltd., Montreal, Toronto, Vancouver.



Why are STANDARD-KNAPP MACHINES STANDOUTS?





❶ *Bag Packer*

❷ *Labeler*

❸ *Bottle Packer*

Because—

Standard-Knapp machines stand out for their top quality performance.

They meet every type of package production requirement. Standard-Knapp case sealers, bag packers, bag fillers are built sturdily and of highest quality materials.

They are simply designed to perform essential packaging operations with automatic precision.

They operate at minimum maintenance, efficiently, economically. And Standard-Knapp machinery keeps turning out standout performance throughout its long life.

* * *

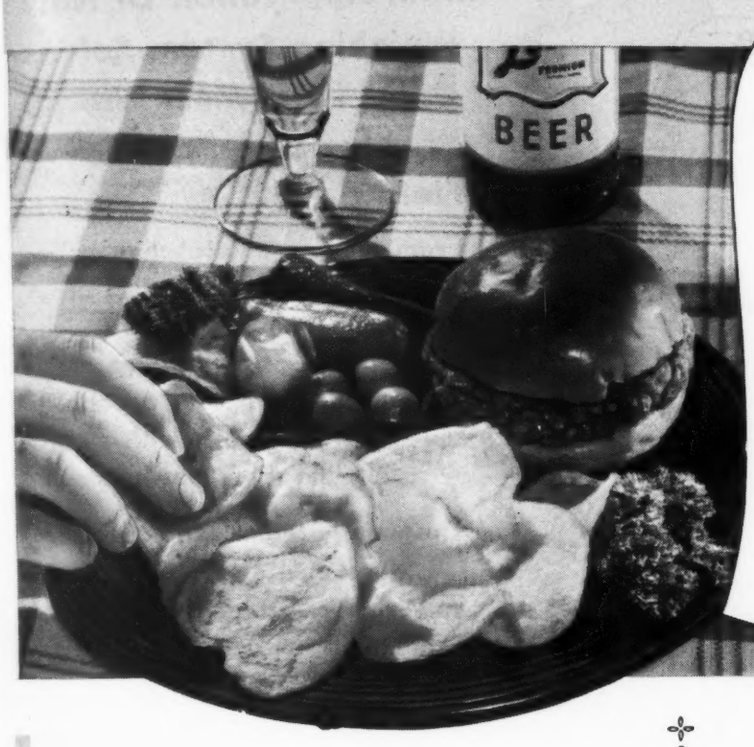
For these reasons, the packaging industry turns to Standard-Knapp engineers for their equipment, or when a new design is needed to handle some new packaging operation. Because Standard-Knapp machines are standouts, they have become standard in leading plants throughout the packaging industry.

Standard-Knapp Corp.

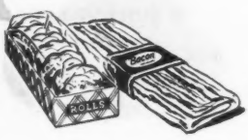
MANUFACTURERS OF CASE SEALING, CASE PACKAGING AND CAN LABELING MACHINES
FACTORY and GENERAL OFFICES—PORTLAND, CONNECTICUT

570 Lexington Avenue, NEW YORK 22, N. Y.
221 North La Salle St., CHICAGO 1, ILL.
145 Public Square, CLEVELAND 14, OHIO
300 Seventh Street, SAN FRANCISCO 3, CALIF.
420 S. San Pedro Street, LOS ANGELES 13, CALIF.
2615 Western Avenue, SEATTLE 99, WASH.
1204 S. W. Yamhill Street, PORTLAND 5, OREGON
349-350 Paul Brown Bldg., ST. LOUIS 1, MO.
6 Radcliffe Rd., ALLSTON 34 (Boston), Mass.
Windsor House, Victoria St., LONDON S. W. 1, ENG.
Orlando, Fla.

From the Rhinelander Notebook



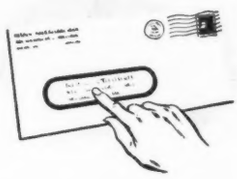
Once a nibbling tidbit now an important staple food, 200,000,000 pounds of potato chips are made yearly. To counteract moisture . . . the chip's eternal enemy, Rhinelander makes some of the finest, tightest papers known to the potato chip industry.



Labels printed on Rhinelander Snowdrift glassine (white opaque) have the sparkle of varnish (but eliminate its cost). They are also *greaseproof*—suggesting a wide use for *meats, baked goods,* etc. Heat-sealing, too, if desired.

The rich translucence of expensive parchment reproduced at low cost by *Lamiluxe*—Rhinelander's *multi-ply laminated glassine.* This fascinating material will be available again for lamp shades and a hundred other uses as soon as glassine supplies permit.

Fine meat off the range poses dozens of tricky packaging worries. For years the Packers have relied on the *special properties of Rhinelander G and G Task Papers** to help solve the meat industry's many problems of protection and merchandising.



Window Envelopes speed the mail, cut stenographic costs, streamline office routine. Rhinelander Paper Company has perfected special glassine for this use *—super transparent, durable* and *velvet-smooth* on *production lines.*

Wet and oily are the mackerel and the cod. The perishable goodness of huge tonnages of seafood gets fine protection from *G and G Task Papers**—through such vital qualities as *greaseproofness, odor control, wet strength*—and *moisture retention in freezing.*

**Glassine and Greaseproof—the functional papers that do so many tough jobs well*

Rhinelander
PAPER COMPANY

IN THE LAND O'LAKES. MILLS AT RHINELANDER, WIS.

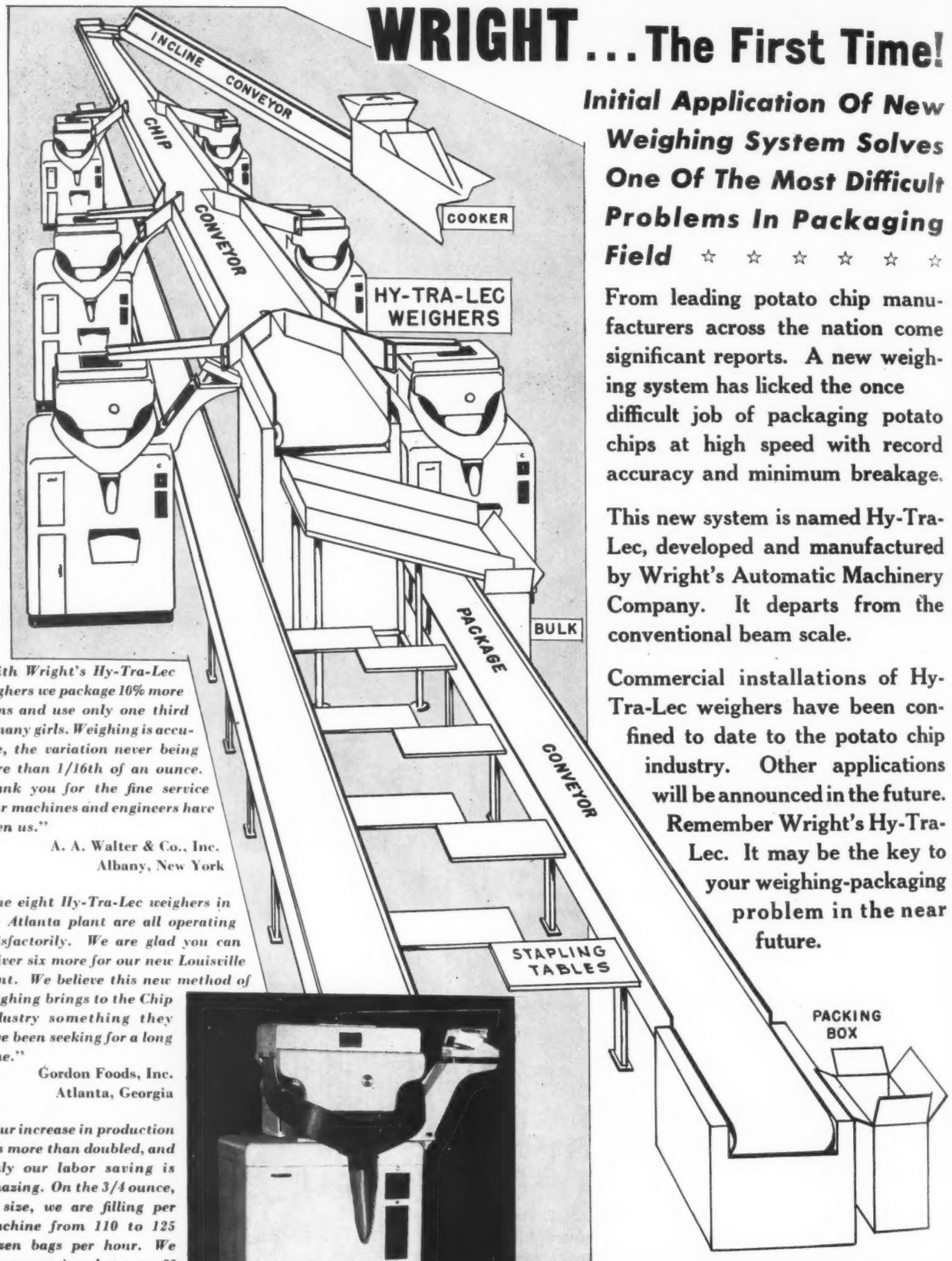
WRIGHT...The First Time!

Initial Application Of New Weighing System Solves One Of The Most Difficult Problems In Packaging Field ☆ ☆ ☆ ☆ ☆ ☆

From leading potato chip manufacturers across the nation come significant reports. A new weighing system has licked the once difficult job of packaging potato chips at high speed with record accuracy and minimum breakage.

This new system is named Hy-Tra-Lec, developed and manufactured by Wright's Automatic Machinery Company. It departs from the conventional beam scale.

Commercial installations of Hy-Tra-Lec weighers have been confined to date to the potato chip industry. Other applications will be announced in the future. Remember Wright's Hy-Tra-Lec. It may be the key to your weighing-packaging problem in the near future.



"With Wright's Hy-Tra-Lec weighers we package 10% more items and use only one third as many girls. Weighing is accurate, the variation never being more than 1/16th of an ounce. Thank you for the fine service your machines and engineers have given us."

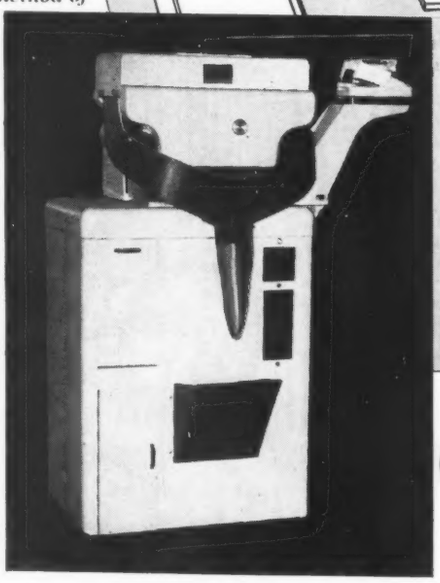
A. A. Walter & Co., Inc.
Albany, New York

"The eight Hy-Tra-Lec weighers in our Atlanta plant are all operating satisfactorily. We are glad you can deliver six more for our new Louisville plant. We believe this new method of weighing brings to the Chip Industry something they have been seeking for a long time."

Gordon Foods, Inc.
Atlanta, Georgia

"Our increase in production has more than doubled, and truly our labor saving is amazing. On the 3/4 ounce, 5c size, we are filling per machine from 110 to 125 dozen bags per hour. We are averaging between 80 and 85 dozen packages of 1 3/4 ounce, 10c size, per hour per machine. Breakage is practically nil."

Paradise Foods Co.
Detroit, Michigan



WRIGHT'S *Automatic Machinery Company*

300 Calvin Street — Durham, North Carolina

PIONEERS SINCE 1893
IN AUTOMATIC PACKAGING MACHINES

SOMETHING TO CROW ABOUT...

the protection, the distinction, the economy of O-I closures!

O-I closures are the tops in their field!

We manufacture millions of precision closures every year—in plastic and metal: closures designed to protect your products and enhance the beauty of your packages!

Our high-speed, low-cost production is backed by extensive research, expert designing and our long manufacturing experience . . . and maintains the same high standards you have known in all Owens-Illinois products. Let us help you select a closure that will be exactly right for your package.

CLOSURE DIVISION

OWENS-ILLINOIS GLASS COMPANY

TOLEDO 1, OHIO, BRANCHES IN PRINCIPAL CITIES

It's SYLVANIA* for Cellophane!

to protect cookies

and chops

Versatile Sylvania Cellophane protects all three —and many more! This shimmering wrap combines beauty with outstanding functional qualities. It protects against air, dust and moisture . . . seals flavor and freshness in.

Sylvania Cellophane today looks and protects better than ever before. Soon even larger quantities of this indispensable packaging material will be available for every requirement.

and lemon drops!

SYLVANIA CELLOPHANE

Made only by SYLVANIA DIVISION
AMERICAN VISCOSE CORPORATION
Manufacturers of cellophane and other cellulose products since 1929
General Sales Office: 122 E. 42nd Street, New York 17, N. Y. *Plant:* Fredericksburg, Va.

SYLVANIA CELLOPHANE

*Reg. Trade Mark

DAS RHEINGOLD

A WAGNERIAN ENVOI

(Last January, advertisements announced that "lovely Miss Pa
"Miss Rheingold, 1945." In August, new ads asked the public t
Rheingold for 1946. Rheingold's current advertising displays
Daigle the winner.)

It has come, we are parting!
A week more, a day,
Heart pounding, eyes smarting,
She'll gallop away,
A pelt on her pommel, six trout in her creel,
A face of sheer beauty and muscles of steel.
Off, off to the mountains
Where Rhein maidens drear
By desolate fountains
Sit dreaming of beer,
While once more resounds the bright hunting horn's knell
Through the vales of December. Halloo and farewell!

O hateful arrangement!
O Faustian fate
Which compels our estrangement
Who, comrades of late,
Went a-roving in fantasy, shared the same blind,
Heard the cry of the hounds down the Westchester wind,
Bowled, sambaed, went swimming,
Lugged shotguns or packs,
With fervor undimming
And outfits by Saks.
Alas! We awake with a start to discover
Our fleeting if arduous friendship is over.

For the judges have gathered,
The die has been cast,
And with hearts no more tethered
To maids of the past,
We drink to Miss Daigle, the next in the line
Of bright-cheeked, ubiquitous Maids of the Stein,
Who, with spurs at the ready,
Guns, fly rods, and dogs,
Eyes flashing, nerves steady,
And trunkfuls of togs,
Strains forward, impatient, to fill in the void
To be left by the now scarce-remembered Miss Boyd.

O Rhein maidens, hearken
Lest you in your pride
Think time will not darken
Nor circumstance hide
The sheen of your beauty acclaimed far and near
Through the bounty of Kodachrome, billboards, and beer.
Remember the mountains
Where other maids mourn
By desolate fountains,
Unhorsed and forlorn,
The fate which must ere a brief twelvemonth befall—
Be they never so strenuous—Rhein maidens all.

—CHARLES MAITLAND FAIR

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Never mind, New Yorker—

A consensus of all Miss Rheingolds, past and present . . . their agents, and representatives of the Bureau of Internal Revenue . . . indicates that it is far better to be an ex-Miss Rheingold than never to have been Miss Rheingold at all! . . . Now may we introduce—

Miss Rheingold 1947

. . . Miss Michaele Fallon in private life . . . blue-eyed redhead, age 24, weight 110, height 5 feet 6½ inches, married, lives in Manhattan, her telephone—taken out. Not interested in Hollywood or the stage. Will be featured in Rheingold advertising in 1947.

Proof that all the world loves the Irish, or redheads, Miss F. polled 100M more votes than any of the five other beautiful nominees . . . while ballots of New York's beer drinkers reached a new high—almost 1,500,000.

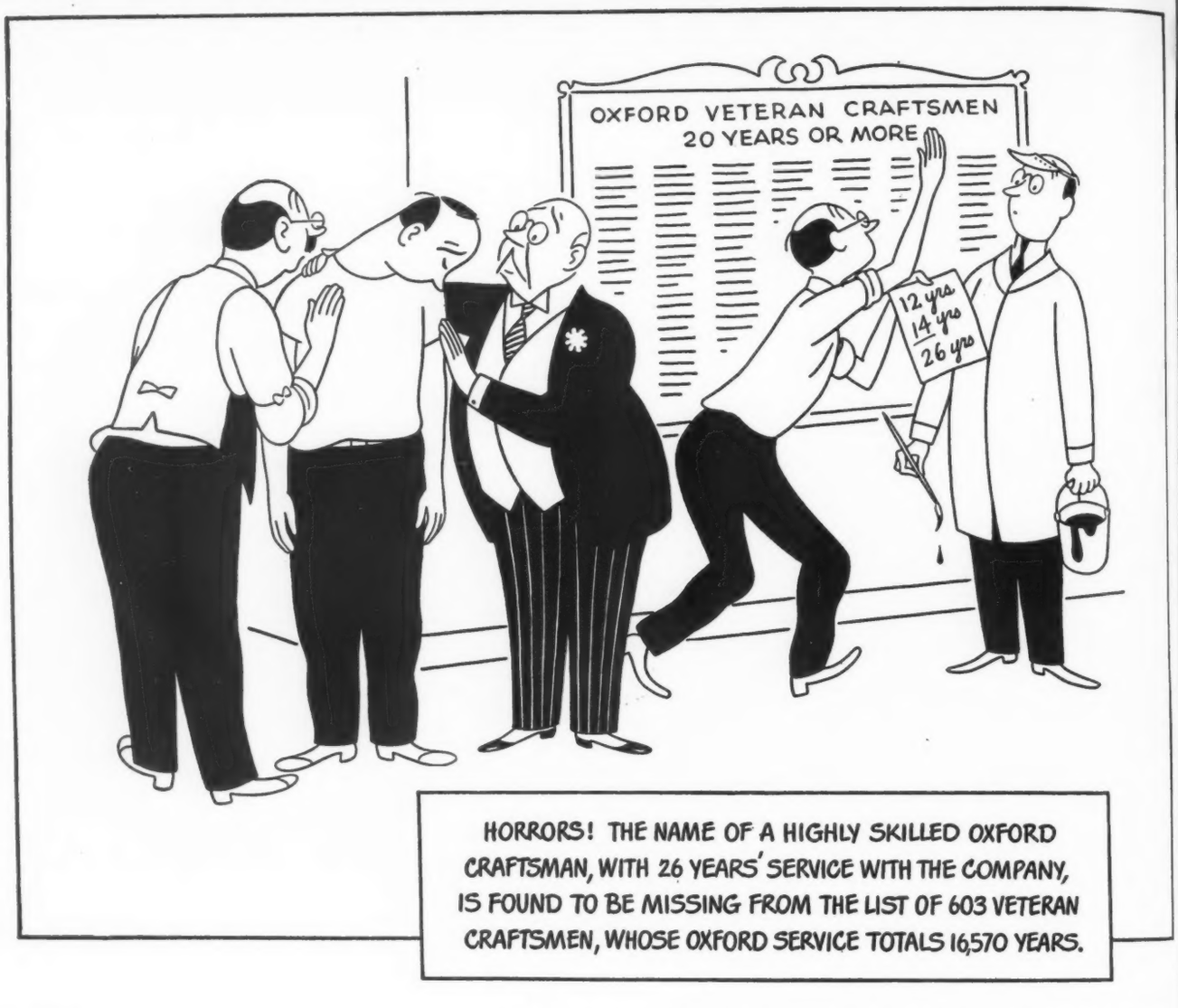
This annual competition to elect a Miss Rheingold . . . in seven years has made Rheingold one of the two best sellers in New York (as far as we can tell without hiring detectives!) No doubt the beer itself, the Liebmann Breweries, and Young & Rubicam also contributed something. And while it's not considered nice to point—may we mention, that the Miss Rheingold competition was conceived by the Einson-Freeman Co., which produces good ideas as well as fine lithography.

Einson-Freeman Co., Inc.

MERCHANDISING-MINDED LITHOGRAPHERS

Starr & Borden Aves., Long Island City, N. Y

Near Crisis at Oxford Paper Company by Tony Barlow


OXFORD VETERAN CRAFTSMEN
20 YEARS OR MORE
12 yrs
14 yrs
26 yrs
HORRORS! THE NAME OF A HIGHLY SKILLED OXFORD CRAFTSMAN, WITH 26 YEARS' SERVICE WITH THE COMPANY, IS FOUND TO BE MISSING FROM THE LIST OF 603 VETERAN CRAFTSMEN, WHOSE OXFORD SERVICE TOTALS 16,570 YEARS.

THE papermaking experience of Oxford craftsmen—listing only those with the company 20 years or more — indicates why Oxford papers are of such uniformly high quality.

Here at Oxford are 603 craftsmen with 20 years or more of service, and 339 of them have 25 years or more, while 31 have exceeded 40 years. Many families boast three generations at the mill.

Supplementing this exceptional know-how is Oxford's *completeness* of operations. Oxford makes its own pulp and performs every papermaking operation. This means 100% control of quality while producing over 1,000 miles of quality paper a day.

Helping to maintain quality standards are the countless inspections and checks. Tests for such things as strength, surface bond, curl, fold and printability. And Oxford research continues to contribute to the advance of the papermaking art in many directions.

So when you need quality papers, specify Oxford. Paper merchants in key cities coast to coast distribute Oxford quality papers.

Included in Oxford's line of quality printing and label papers are: ENAMEL-COATED — Polar Superfine, Maineflex, Maineflex C1S Litho, Mainefold and White Seal; UNCOATED — Engravatone, Carfax, Aquaset Offset, Duplex Label and Oxford Super, English Finish and Antique.

OXFORD PAPER COMPANY

230 PARK AVENUE, NEW YORK 17, N. Y.

MILLS at Rumford, Maine and West Carrollton, Ohio — *WESTERN SALES OFFICE: 35 East Wacker Drive, Chicago 1, Ill.* — *DISTRIBUTORS in 48 Key Cities*

MOSSTYPE RUBBER PLATES

Better Printing doesn't just happen

—IT IS CAREFULLY PLANNED IN ADVANCE

●

EXPERIENCE has proven that the most expensive and time consuming method of operation is to treat artwork, engraving, platemaking, plate mounting and make-ready as individul, separately supervised steps, when they should be treated as parts of one coordinated effort. Following are some of the important elements, each important unto itself but definitely dependent on each other if the *END RESULTS* of *HIGH QUALITY* and *LOW-COST* are to be attained. Are these checked in *YOUR PLANNING?*

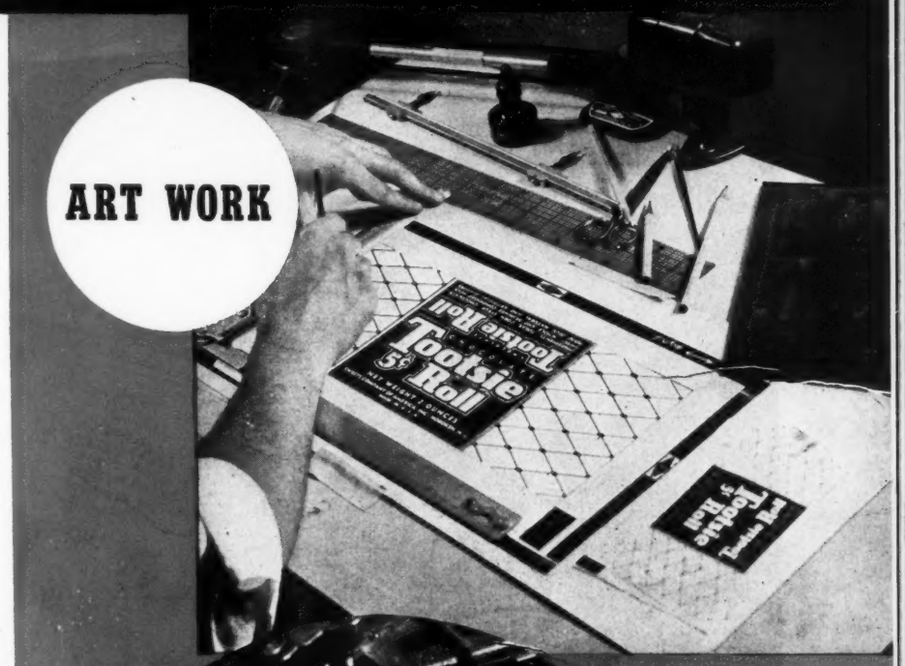
- ☐ Sharpness and cleanliness of detail and layout
- ☐ Allowances for stretch and distortion
- ☐ Overprinting
- ☐ Color Register
- ☐ Correction for Aniline Ink Printing
- ☐ Deeply etched engravings
- ☐ Properly routed engravings
- ☐ Pre-make-ready built-in
- ☐ Undercutting and shoulders
- ☐ Uniform thickness
- ☐ Tempered halftones for clean reproduction
- ☐ Keyed for quick and easy attachment to plate cylinders
- ☐ Permanently bonded in exact register
- ☐ Color-proved

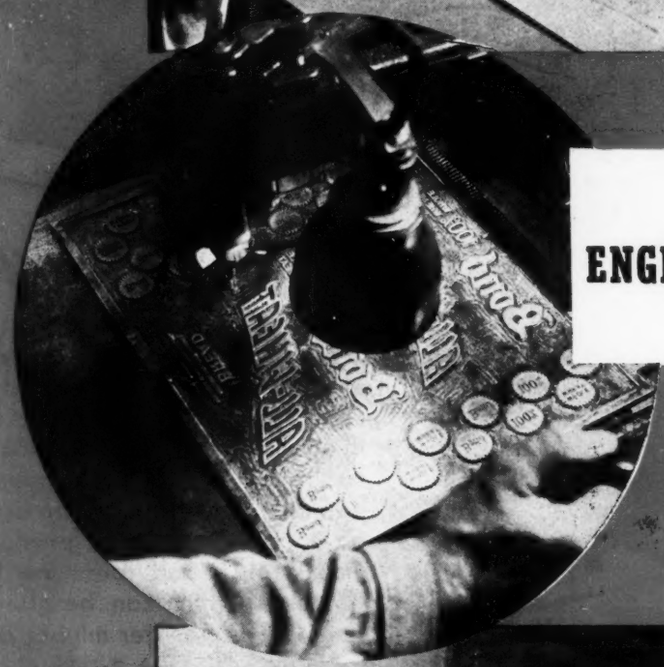
WE ARE efficiently and completely staffed to handle your jobs *FROM* the *CUSTOMER'S SKETCH* right on up *TO* the point of *PRESS OPERATION*. There is available for you at all times a complete technical service to aid you in every possible way to produce *BETTER PRINTING.*

Write for a set of our Purchase Order *SPECIFICATION FORMS*—see how easy and simple it is to order MOSSTYPES.* They will be sent promptly and, of course, without cost.

*TRADE MARK REG. U. S. PAT. OFF.

MOSSTYPE CORPORATION
33 FLATBUSH AVENUE
BROOKLYN 17, N. Y.





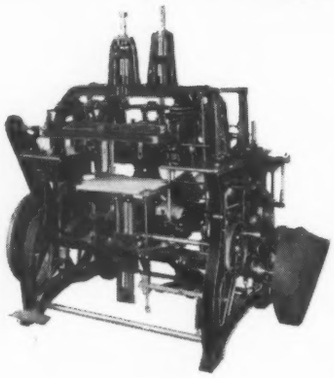
RELY ON MOSSTYPE RUBBER PLATES

US

Manufactures Machines For

NET WEIGHING
GROSS WEIGHING
PACKING
PACKAGE FORMING & FILLING
CARTONING
CARTON SEALING
CARTON LINING
CARTON WRAPPING
PAPER BOX FORMING
PAPER BOX COLLAPSING

. . . they chose US

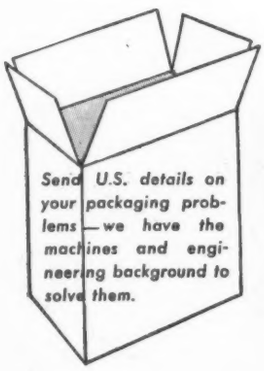


STANDARD BRIGHTWOOD BOX MACHINE

The users of the paper cheese boxes illustrated are but a few of the many manufacturers who chose ***US*** to solve their packaging problems. We recommended the Standard Brightwood for its great economy and wide flexibility. This fast and efficient machine can make both the two-piece full telescope box and cover and the two-piece halfbox in two and five pound sizes—styles that are most popular in the industry. Using prepared blanks, plain or printed, of from 15-75 point stock the Brightwood glues, folds, and forms the blanks under great pressure. By using two machines, which can be attended easily by a single operator, up to 60 complete boxes per minute can be made.

The standard Brightwood can also be equipped to produce other types and sizes of work—one piece hinge cover boxes, shallow lids and trays.

If boxes figure in your business, then you'll be wise to let ***US*** figure your box production costs—write ***US*** today.



Send U.S. details on your packaging problems—we have the machines and engineering background to solve them.

US Automatic Box Machinery Co. Inc.

Owning and Operating

NATIONAL PACKAGING MACHINERY CO. • CARTONING MACHINERY CORP.

18 ARBORETUM ROAD, ROSLINDALE, BOSTON 31, MASS.

Branch Offices: NEW YORK CLEVELAND CHICAGO
LOS ANGELES (KRUGH EQUIPMENT & SUPPLY CO.)

COMING AT YOU—
PLASTIC MOLDED JAR CLOSURES
A DIVERSITY OF COLORS, STYLES AND SIZES INCLUDING STANDARD 33, 38, 43, 45, 48, 51, 53, 58, 63, 70, 83 and 100 MM.
Right Now! That's when we can make delivery on these smart, gem-like molded closures—for jars, bottles and other containers. Probably no need to tell you, too, that they're durable, easy to apply, rustless, and resistant to oils, chemicals and corrosives. You, as well as your dealer, know from past experience how good Mack plastic closures are, and how they enjoy wide consumer acceptance. The important thing right now is that you can get them RIGHT, and you can get them NOW! Samples and quotations on request; write to Mack Molding Company, Inc., 160 Main Street, Wayne, N. J.
Mack MOLDED EXCELLENCE
SALES OFFICES: NEW YORK CITY, CHICAGO, DETROIT, INDIANAPOLIS BOSTON, ST. LOUIS

WINNERS

become famous when they win consistently

...says Robert Gair

GAIR FOLDING CARTONS are famous too, not only for constant outstanding performance on important high speed production lines, but for winning laurels consistently in the highly competitive markets of America. These distinguished "tailor-made" cartons are **GAIRanteed** to meet every speed and uniform precision requirement of the most modern high speed packaging machines.

REVELATIONS IN NEW PACKAGING MACHINE

Our research staff has assembled importa wartime developments in the packaging ma chine industry. This information with man of the latest photographs, dramatically fea tures a twenty-four page brochure, no available on request. Write today for you copy of "PRECISION PACKAGING

GAIR

ROBERT GAIR COMPANY, INC., NEW YORK • TORONTO • PAPERBOARD • FOLDING CARTONS • SHIPPING CONTAIN

Available Now ...FOR EARLY DELIVERY

SINGER

ELECTRIC BONDING MACHINE 248-2

For Electronic Seaming of Thermoplastics

MAKES NEAT, STURDY, WATERPROOF AND AIRTIGHT SEAMS

in the production of Rainwear, Shower Curtains, Powder Capes, Clothes Bags, Aprons, Pouches, Lamp Shade Covers, Dish Covers, Umbrellas and similar articles made of thermoplastic sheet materials. Seams produced are almost invisible and as strong as the material itself.

SEAMING and other thermosealing operations such as hemming, binding, half lap seam felling, tacking, etc., are accomplished on the Singer 248-2 Electric Bonding Machine by the passage of high frequency current through the thermoplastic material as it is moved between two electrodes, one above and one below the material being bonded. The seams produced are not only proof against leakage of water or air; they are stronger than the material itself. They can be made straight or curved, and sharp corners can be made without difficulty.

Widely used already in the fabrication of many consumer articles made of thermoplastic film, the range of usefulness and flexibility of this machine are resulting daily in new applications, especially in the field of rainwear and other waterproof articles where the absence of needle punctures is an advantage.

A technical bulletin describing the operating features of Singer 248-2 Electric Bonding Machine will be sent you on request. Write for it, today.

SINGER

SEWING MACHINE COMPANY

MANUFACTURING TRADE DEPARTMENT

149 Broadway • New York, N. Y.

Copyright U. S. A. 1946 by The Singer Manufacturing Co. All rights reserved for all countries.

SINGER SEWING MACHINE COMPANY
149 Broadway, New York 6, N.Y.
Please send me copy of your bulletin describing the Singer 248-2 Electric Bonding Machine.

Name_____

Street_____

City_____ State_____

RESERVATIONS FOR SPACE

in the 1948 MODERN PACKAGING ENCYCLOPEDIA

Are now being accepted...

This year, for the first time, there are *no* restrictions on the amount of space which can be bought in the Modern Packaging Encyclopedia.

This year, for the first time, advertisers may use fractional space commensurate with their requirements. Fractional space in $^1/_4$ and $^1/_2$ pages will be accepted for the 1948 edition.

Like its famous predecessors, the 1948 Modern Packaging Encyclopedia will be the only complete handbook, guidebook and textbook of packaging in the world. It will cover every phase of packaging, every aspect, every facet of the world-wide packaging industries from design principles through finished containers.

The packaging executives who buy and read the Modern Packaging Encyclopedia are the key men in the top firms doing the bulk of purchasing in packaging's five billion dollar annual market. Advertisers find this readership a fruitful source for year-round business.

For space reservations, rates and other information, write, wire or phone

MODERN PACKAGING ENCYCLOPEDIA

The Only Encyclopedia of Packaging in the World

PUBLISHED by PACKAGING CATALOG CORP.
122 East 42nd Street
New York 17, N. Y.

Cleveland • Chicago • Los Angeles

Creative designing and restyling
Exclusively handmade boxes

by

MAKDON

in New York City

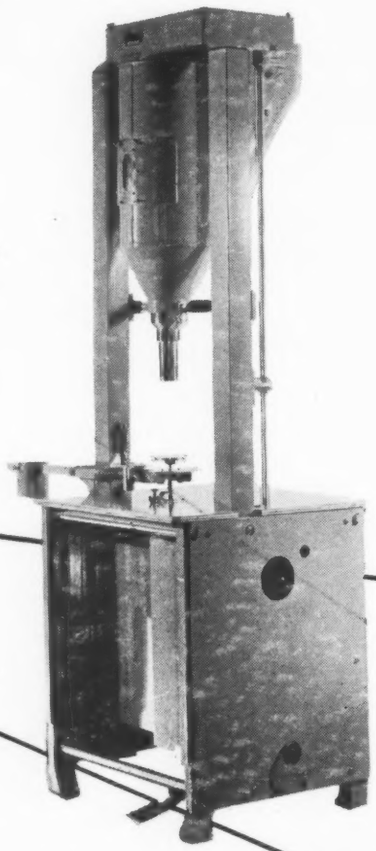
306 WEST 37th STREET • SINCE 1940

in Paris, France

STE ANONYME JACQUES MAKOWSKY
ATELIERS D'IMPRESSION ET DE CARTONNAGE D'ART
34 RUE DES PEUPLIERS • SINCE 1920

UNIVERSAL FILLER

for



BOTTLES or CANS

ODD SHAPES

BOXES

BAGS

4 *machines in one efficient unit*

Our various customers fill more than 150 different kinds of materials on the Universal Filler . . . Drugs . . . Cosmetics . . . Foods . . . and other household products. Powders and pastes and free-flowing materials—products which must be packed and crowded into the container; products which must be handled gently, without pressure. (In fact, everything but solids and liquids). And, so versatile is this Filler that one customer fills 38, another 31, and another 24 *different kinds of materials on one machine!*

Fills practically any kind of container with almost any kind of material!

STOKES & SMITH Co

PACKAGING MACHINERY — PAPER BOX MACHINERY

FRANKFORD • PHILADELPHIA 24 • PA.

FACIL FABRICS CORPORATION

111 W. 24TH ST. N.Y. 11

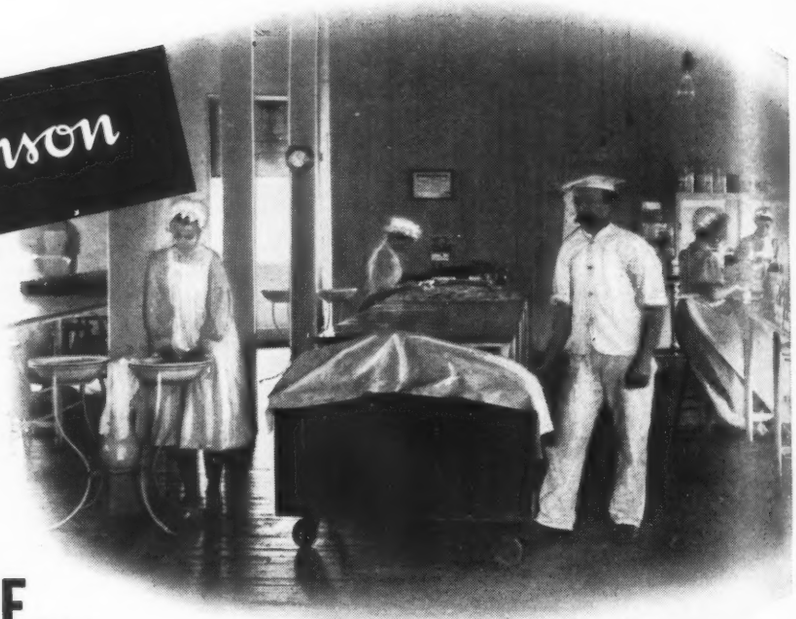
"....then sprinkle in B^1"

Yes, it's as easy as that! To obtain an extra amount of Vitamin B^1 in your diet, simply add Happy Harvest Toasted Wheat Germ when making home-baked bread or muffins and dozens of other dishes. It's a nourishing, ready to eat breakfast food, too, a hit with all ages when served with sugar and cream. The Kretschmer Corp. of Carrollton, Michigan, has assured dependable protection for their product, "Happy Harvest", by sealing with Crown Screw Caps. Exclusive features of Crown Screw Caps give them maximum sealing efficiency under all conditions. In addition to Crown's patented, better-sealing thread construction, these black-plate, or untinned, closures are Bonderized to inhibit corrosion. The all important liners are of full thickness and top quality. No wonder so many prominent manufacturers standardize on Crown Screw Caps. Crown Cork & Seal Co., Baltimore 3, Md. *World's Largest Makers of Metal Closures.*

At the Canners' Show in Atlantic City, Crown will be at Booth 54, Convention Hall.

CROWN CLOSURES

Johnson & Johnson



Early Methods of Sterilizing Surgical Dressings

A LONG LIFE... PROLONGING LIFE

IN 1886 the Lister system of antiseptic surgery reduced the mortality rate in major operations to 6% . . . from over 50% . . . but surgery was severely hampered by lack of sterile dressings. In that year, Johnson & Johnson was formed to meet this need.

Real progress came fast. In 1887, Johnson & Johnson packed absorbent cotton in a new way . . . in sheets rolled between tissue paper. In 1890, they developed dry sterilization, the forerunner of the present method of sterilizing sealed packages.

Today, Johnson & Johnson has plants throughout the world . . . and their many products play an important part in helping to save and prolong human lives.

HOW JOHNSON & JOHNSON USES RIEGEL FUNCTIONAL PAPERS

Among the Riegel Papers used by Johnson & Johnson is a special heat-sealing, printed glassine for the individual wrapping of BAND-AID adhesive bandages. It was developed in the Riegel Laboratories to meet Johnson & Johnson's severe sterilization requirements.

Riegel Papers

FOR FUNCTIONAL PACKAGING

RIEGEL PAPER CORPORATION • 342 MADISON AVE. • NEW YORK 17, N. Y.

COLGATE DENTAL CREAM IN WIRZ TUBES

Teen Agers are a knowing lot. Seventy-six percent of them prefer tooth paste and 45 percent prefer Colgate's, more than double the next two brands. Congratulations to this national favorite and WIRZ customer of long standing. The figures come from the recent study made by Market Research Company of America of 3,000 readers of HIT PARADER—song-lyric magazine of over a million copies a month. More often than not you'll find the Nation's favorites in WIRZ Tubes. Their convenience, protection and added appeal make them ideal containers.

We suggest you put WIRZ Collapsible Metal Tubes in your packaging plans.

ESTABLISHED 1836
A. H.
WIRZ
Inc.

Fourth & Cole Sts. • CHESTER, PA.
Export Division—751 Drexel Bldg., Philadelphia 6, Pennsylvania

New York 17, N. Y. 50 E. 42nd St.
Chicago 4, Ill. 80 E. Jackson Blvd.
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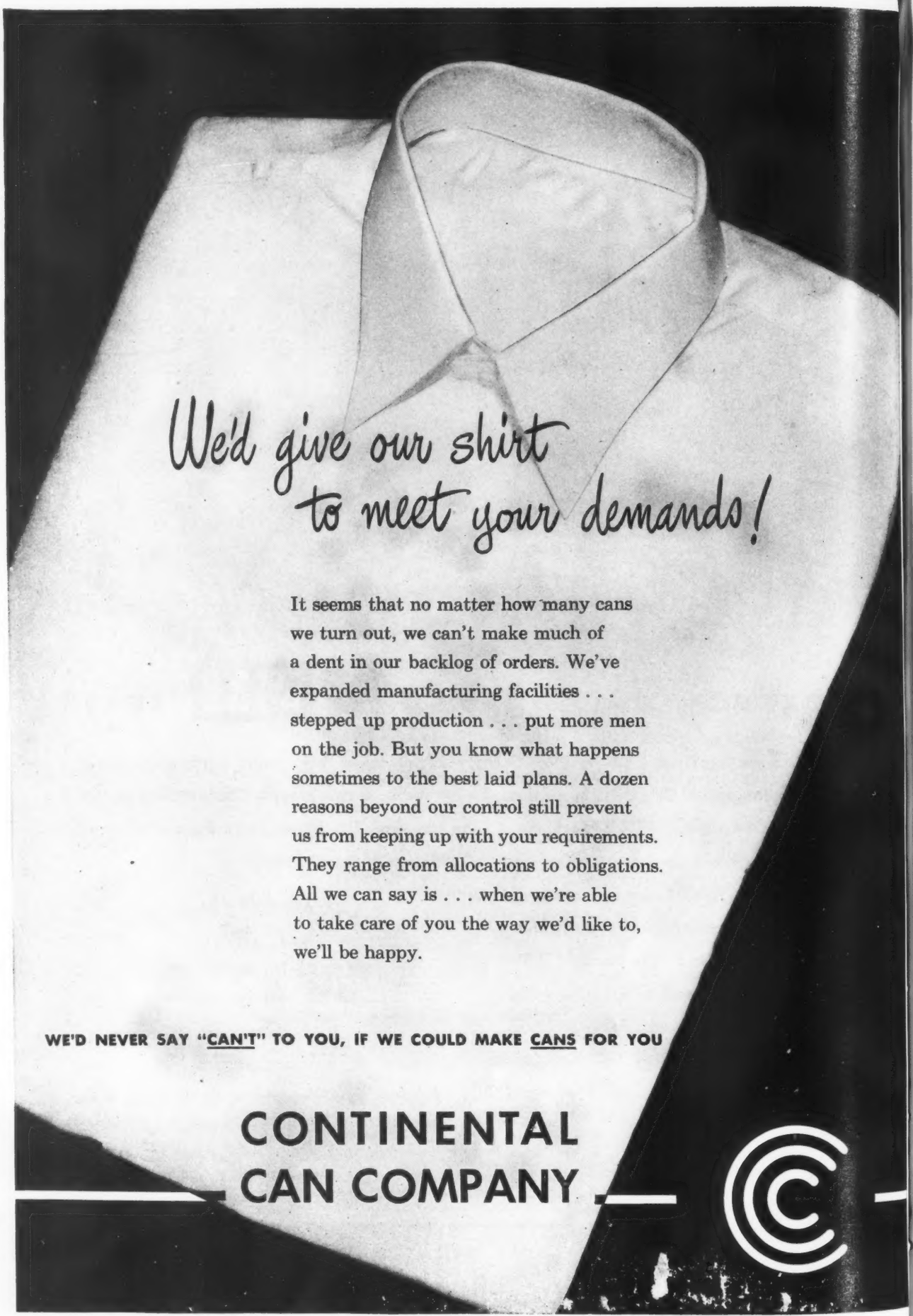
Havana Cuba Roberto Ortiz Planos
A. G. Spilker Los Angeles 14, Calif. 1709 W. 8th St. Exposition 0178—Also Danville, Calif.

Collapsible Metal Tubes • Lacquer Linings • Wax Linings • Westite Closures • Soft Metal Tubing • Household Can Spouts • Applicator Pipes • Compression Molding


We'd give our shirt
to meet your demands!
It seems that no matter how many cans
we turn out, we can't make much of
a dent in our backlog of orders. We've
expanded manufacturing facilities . . .
stepped up production . . . put more men
on the job. But you know what happens
sometimes to the best laid plans. A dozen
reasons beyond our control still prevent
us from keeping up with your requirements.
They range from allocations to obligations.
All we can say is . . . when we're able
to take care of you the way we'd like to,
we'll be happy.
WE'D NEVER SAY "CAN'T" TO YOU, IF WE COULD MAKE CANS FOR YOU
CONTINENTAL
CAN COMPANY

BETTER PRODUCT

PROTECTION IS NO SECRET!

FINDING the answer to the problem of better packaging your product for distribution is often a tough problem. With us, it is an everyday practice — and we've solved a lot of tough ones. If your demands are for water protection, moisture-vapor or greaseproof protection, strength, pliability, closures, sanitation, flavor and freshness . . . plus sales appealing decoration, then one or more of our Thilco *Functional* papers will expertly do the job. Our line includes M. G. Krafts, Asphalt waterproof papers, Waxed thermo-plastics, and Greaseproof papers — All convertible to printing, embossing and bags in our own mill and tailor-made to your specific requirements.

Here are 3 typical functional problems . . . .

STRENGTH • WATER-VAPOR • APPEARANCE

REINFORCED WATERPROOF PAPERS

WAX-LAMINATED PAPERS

COLORFUL PRINTED PAPERS

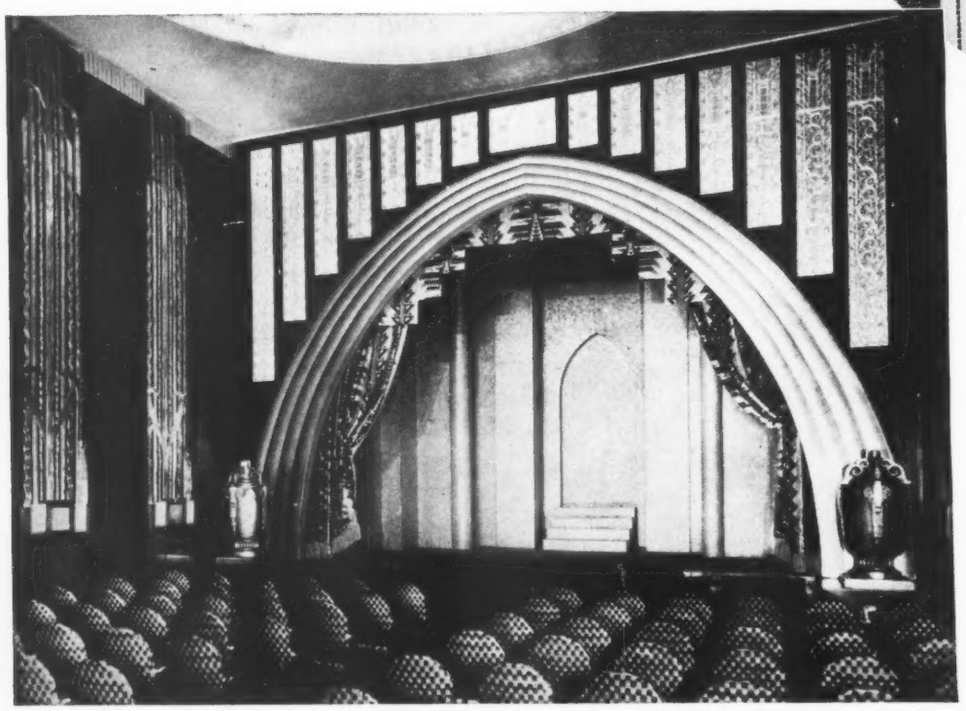
THILCO *Functional* PAPERS

THILMANY

PULP & PAPER COMPANY

KAUKAUNA • WISCONSIN

more importance for the dramatic moments in your business . . . . . .



chanin building

122 EAST 42nd STREET
CORNER LEXINGTON AVENUE
NEW YORK CITY

Leading business and industrial organizations prefer the CHANIN AUDITORIUM on the 50th floor of the Chanin Building for New York previews for trade and press of their industrial motion pictures, as well as for business conferences, sales training courses and stockholders' meetings.

Located at the corner of 42nd Street and Lexington Avenue, the Auditorium is quickly accessible by subway, bus or taxi from all parts of the city. Complete stage facilities, including lighting, dressing rooms and ample work space make possible the most elaborate presentations.

Approximately 200 opera-type seats, inviting lounges, large foyers and high-speed express elevator service insure comfort and convenience. Adjoining space suitable for merchandise displays or for refreshments is also available.

For complete information address:

A FEW RECENT AUDITORIUM CLIENTS

American Bemberg Corp.
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Kelvinator Corporation
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Pathe News, Inc.
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Rex Cole, Inc.
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St. John's University Stagers
Robert Louis Stevenson School
The Texas Corporation
United Artists Corp.
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Universal Pictures Corp.
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CHANIN MANAGEMENT, INC. + 122 EAST 42nd ST. + NEW YORK CITY

SURE IT'S BOARD STOCK. The idea that rotogravure is limited to thinner stocks is distinctly old hat. Champlain Rotogravure Presses print millions of these Jello cartons in a continuous operation from a fast-moving *web*. Yet Champlain Presses handle tissue-thin cellophane, difficult foils or glassines with equal ease.

SURE THERE'S FINE TYPE. On Champlain Rotogravure Presses, fine type, heavy solids and delicate tone work are reproduced with amazing fidelity to original art.

SURE IT'S DIE-CUT. The exclusive fully enclosed Speedry ink fountain permits Champlain Presses to use instant-drying inks and lacquers, to print in any number of colors delivering rewound or sheeted, ready for *immediate* fabrication. Or, fabrication steps may be performed *in line* through the addition of standard Champlain units that score, slit, perforate, apply glue, emboss, or punch—*all in a single, continuous passage of the stock.* Champlain's 360° running register control—*push button operated*—instantly corrects registration of color and in-line fabricating steps.

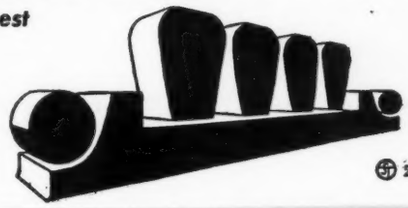
ALL THIS AND LOW COST TOO! For all its speed, versatility and long-known quality, gravure is low-cost, too—a *lot* lower than most people think, lower than processes that lack gravure's advantages. Why not send samples and production data today for a specific analysis of what gravure can do for you. Champlain Company, Inc., 88 Llewellyn Avenue, Bloomfield, N. J.

CHAMPLAIN

ROTOGRAVURE PRESSES

rotogravure at its best

Speedry



2383

time

- Must the adhesive set in one-tenth of a second or ten minutes?
- Must the adhesive bond last three months or thirty years?

temperature

- Must the adhesive be applied under extreme cold or extreme heat?
- Must the adhesive bond stand up under such extremes?

humidity

- Must the adhesive be applied under dry or moist conditions?
- Must the adhesive bond undergo humidity extremes?

Whatever the condition, the Union Paste Company will scientifically tailor an answer for your problem . . . an ordinary packaging or assembly job, or perhaps an entirely new project. The UNION PASTE COMPANY specializes in creating adhesives to meet your own particular requirements in every way.

For further information, please write *today*.

UPACO

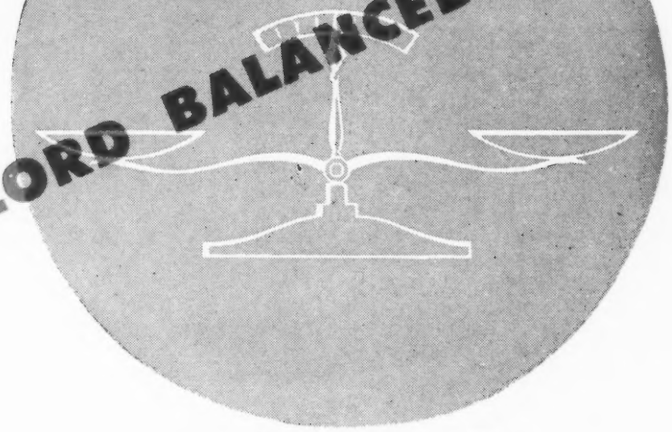
ADHESIVES FOR ALL PAPER, TRANSPARENT FILMS, AND ALLIED CONVERTING FIELDS

THE UNION PASTE COMPANY

1605 HYDE PARK AVENUE HYDE PARK, MASSACHUSETTS

Gaylord Boxes

A FEATURE OF GAYLORD BALANCED DESIGN–



Dependable Strength . .

To properly safeguard your product in freight cars, trucks, and warehouses and in delivery to retailer or consumer, you must be sure of ample, *dependable strength.* • Gaylord balanced design and materials assure you greater strength.

GAYLORD CONTAINER CORPORATION, General Offices: SAINT LOUIS

Standard of The Packaging Industry

- **Corrugated and Solid Fibre Boxes**
- **Folding Cartons**
- **Kraft Grocery Bags and Sacks**
- **Kraft Paper and Specialties**

New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Seattle
Indianapolis • Houston • Los Angeles • Oakland • Minneapolis • Detroit • Jacksonville
Columbus • Fort Worth • Tampa • Cincinnati • Dallas • Des Moines • Oklahoma City
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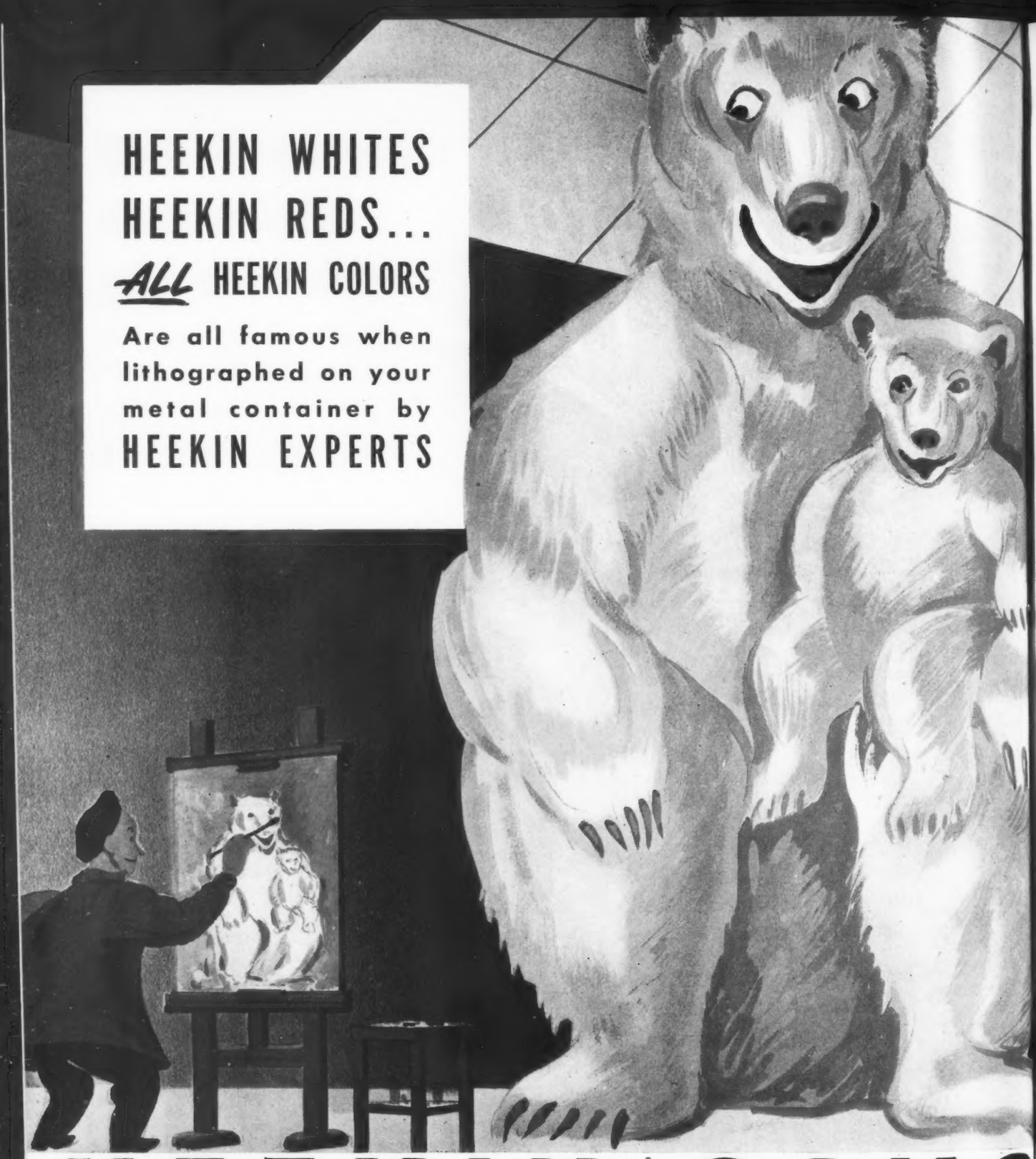
Milwaukee • Chattanooga • Weslaco • New Haven • Appleton • Hickory • Greensboro • Sumter

122



HEEKIN WHITES
HEEKIN REDS...
ALL HEEKIN COLORS

Are all famous when lithographed on your metal container by

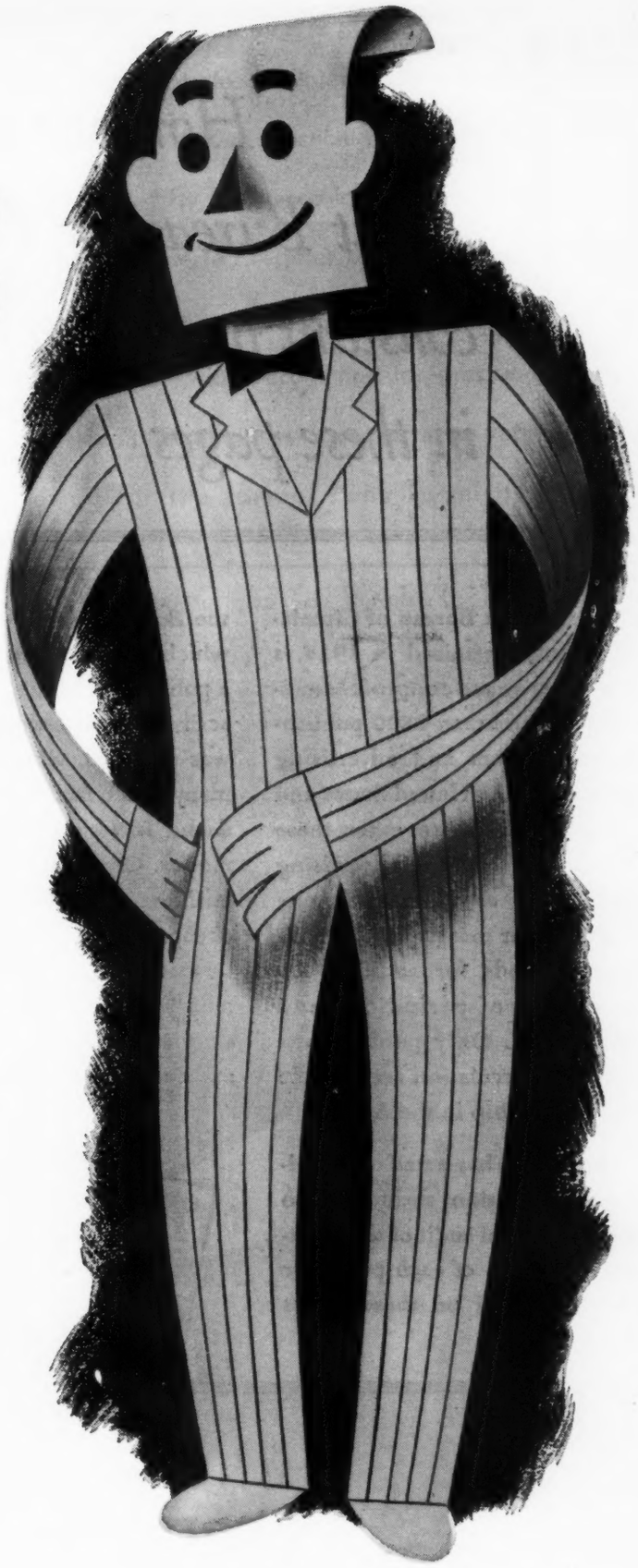
HEEKIN EXPERTS

HEEKIN CANS

With Harmonized Colors

THE HEEKIN CAN CO. CINCINNATI 2, OHIO
FINER LITHOGRAPHERS OF METAL CANS SINCE 1901

HERE'S A MAN WHO LIKES TO BE TAXED!



He's the Mead Paper Man. The more you tax his ingenuity and resourcefulness, the better he likes it. He's the modern research laboratory of the Mead New Products Division which thrives on problems involving the development of *functional* papers . . . papers designed to protect your products from heat, cold, humidity, vapors, gases, liquids, greases, or any other persistent nuisance that may be cutting into your profits. The Mead Paper Man is not a know-it-all. If he can't solve a problem, he says so. But behind him are the full facilities and resources of one of America's most versatile paper manufacturers, now rounding out its first full century of experience. . . . Tax the Mead Paper Man with *your* problem. He'll like it—and probably solve it, too.

MEAD *papers*

ESTABLISHED 1846

NEW PRODUCTS DIVISION

THE MEAD CORPORATION **CHILLICOTHE, OHIO**

How our membership in the Audit Bureau of Circulations gives constant protection to the advertising in these pages.

THE Audit Bureau of Circulations, organized in 1914, is a cooperative and nonprofit association of more than 2800 publishers, advertisers and advertising agencies in the United States and Canada. Working together, these buyers and sellers of advertising space have established definite standards for measuring and uniform methods for auditing the circulation of periodicals and newspapers. Only publications with paid circulation are eligible for membership in the A.B.C.

The Bureau has a staff of experienced circulation auditors who make an annual audit of the circulations records of each publisher member. Based on these audits the Bureau issues A.B.C. reports which tell how much circulation a publication has, how much subscribers pay, how the circulation was obtained, where it goes and many other facts essential to the sound investment of advertising money. Of special importance to business paper advertisers is an occupational or business breakdown of the paid subscribers. This tells you how much of the total circulation represents a logical audience for your advertising and a market for your merchandise. In addition to the annual Audit Reports, the Bureau issues semi-annual Publisher's Statements.

Guesswork and waste are avoided when you select advertising media on the basis of factual information. Always make A.B.C. reports your starting point when you buy advertising space.

This business paper is a member of A.B.C. Ask for a copy of our A.B.C. report and then study it.

SEND THE RIGHT MESSAGE TO THE RIGHT PEOPLE

Paid subscriptions and renewals, as defined by A.B.C. standards, indicate a reader audience that has responded to a publication's editorial appeal. With the interests of readers thus identified, it becomes possible to reach specialized groups effectively with specialized advertising appeals.

MODERN PACKAGING

ABC = *AUDIT BUREAU OF CIRCULATIONS* = *Facts as the Basic Yardstick of Advertising Value*

Labeling without glue
sounds fantastic!

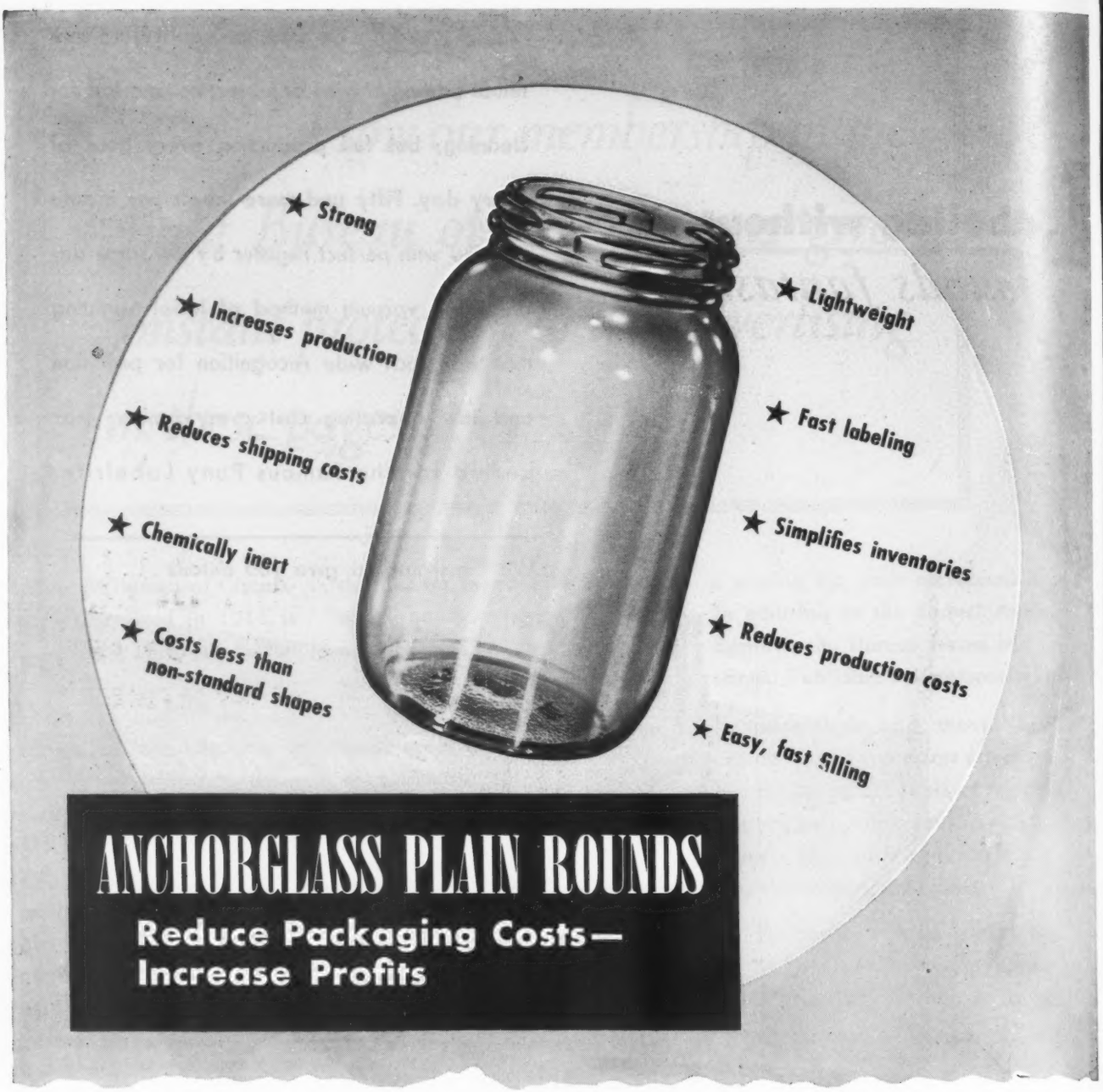
But True! No glue to prepare; no continual adding ot glue or water; no time-loss for cleaning; but full production every hour of every day. Fifty and more labels per minute applied with *perfect register* by the same dependable vacuum method of label handling that won such wide recognition for precision and low operating cost over a nine year period for the famous Pony Labelrite.

We'll be glad to give you details . . .

NEW JERSEY MACHINE *Corporation*

1510 WILLOW AVE. • HOBOKEN, N. J.
Chicago Office: 325 W. Huron Street
Cincinnati Office: 1701 Carew Tower

Export Division • 44 Whitehall Street • New York City, N. Y.



THE production advantages of Anchorglass standard Plain Round Jars automatically mean lower production costs which in turn mean more profitable operation.

For example, the wide mouth means easy, *fast* filling. The smooth cylindrical shape makes possible simplified, fast label application. You'll get long production runs with minimum downtime for changeovers, at the same time simplifying your glass container inventory problems.

Use of Anchorglass Plain Round Jars reduces shipping costs because they're lightweight — yet they're exceptionally strong. Carton size is reduced because cylindrical shapes waste no space. And, of course, Anchorglass Plain Rounds cost less than non-standard designs.

Add all the merchandising and store display possibilities, and you have all the reasons that you need for using Anchorglass standard Plain Round Jars.

Don't miss our exhibit
i n Booth 129
at the Canner's Convention!

Anchor
CONTAINERS and CAPS

PRODUCTS OF
ANCHOR HOCKING GLASS
CORPORATION
LANCASTER, OHIO

SEE THIS FIRST DISPLAY

MAKE YOUR OWN BAGS!

Kono-Mead

HIGH SPEED
BAG-MAKING MACHINES

We are now exhibiting at our Flushing, L. I. headquarters the amazing high-speed electronically controlled bag-making machines which produce heat-sealed bags with glue reinforcements at the rate of 5,000 to 12,000 bags per hour—with only one operator!

NOW READY FOR DELIVERY

These high-output, low-cost bag-makers are coming off the assembly line daily. Come and see them in operation. If you wish, you may place your order at the exhibit.

KONO-MEAD EQUIPMENT CORPORATION

133-23 35th AVENUE • FLUSHING, LONG ISLAND, N. Y. • TEL. FL. 3-8113

"Geo. V. Clark packaging OUTSIDE *means* QUALITY *inside"*

Brilliantly colored MASTRO plastic clothespins in a new Geo. V. Clark "See-Thru" transparent container.

PRODUCT PERFECTION—achieved with difficulty and expense by every manufacturer, is often handicapped by careless packing in containers that fail to show the product to the best advantage.

You'll be delighted with the majestic quality a "SEE-THRU" transparent package gives your product. For every "SEE-THRU" package is fashioned to perfection; born of 60 years of custom craftsmanship by the Geo. V. Clark Co., pioneers in packaging of rigid transparencies.

Superior packaging will put your product far ahead of competition. Let our experts . . . create a package that's designed to *sell* your product . . . take your finished design and manufacture to your exacting specifications. We'll do any one or both!

Get the facts without obligation by mailing the coupon.

CUT OUT AND CLIP TO YOUR LETTERHEAD

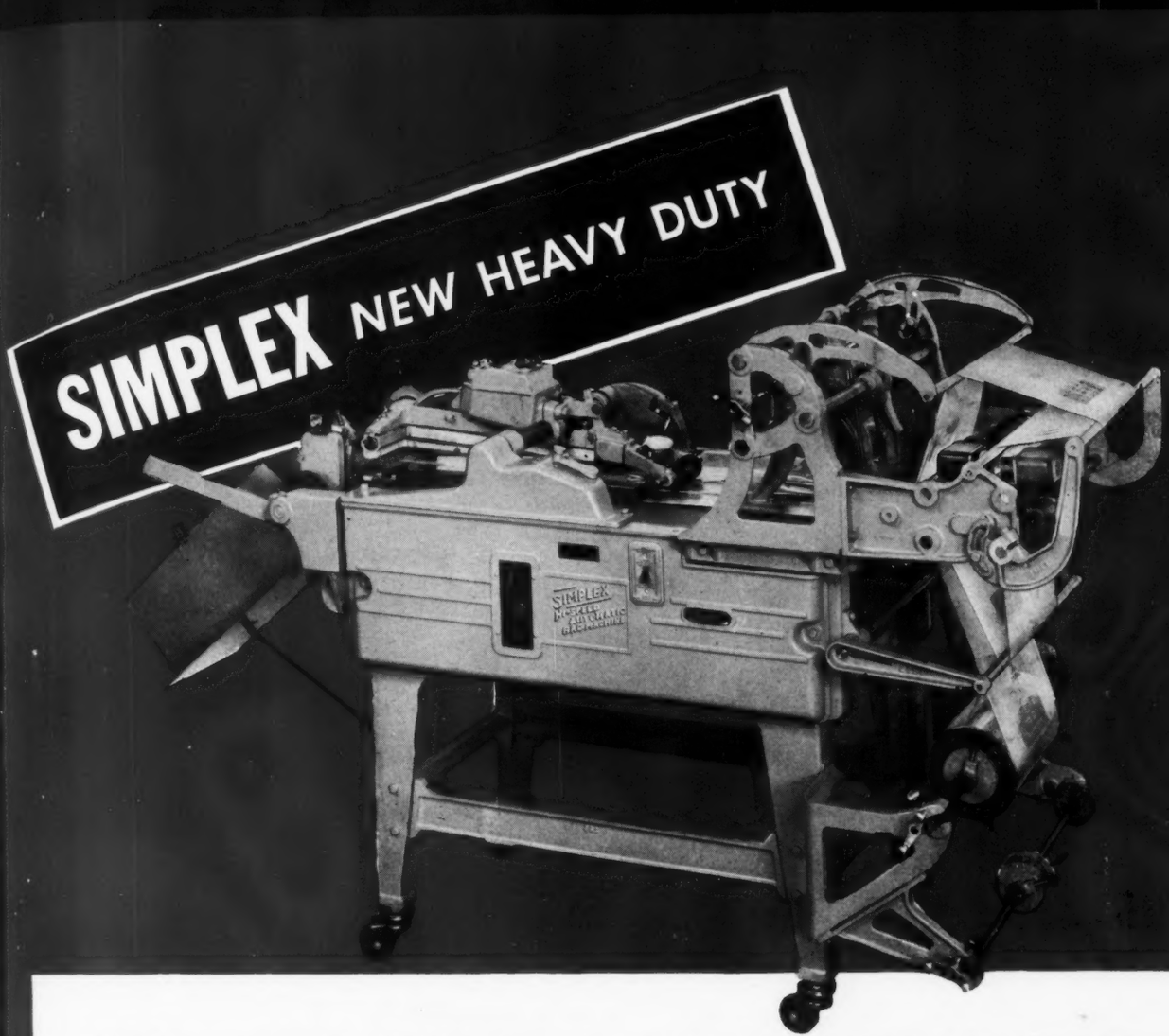
GEO. V. CLARK CO., INC.
SEE-THRU DIVISION
26-15 FOURTH STREET, ASTORIA 2, L. I., N. Y.

Gentlemen: I am interested in having more information and samples of your work.

NAME_____
FIRM_____
ADDRESS_____
CITY AND STATE_____

GEO·V·CLARK

COMPANY, INC.
See-Thru Division
26–15 FOURTH STREET, ASTORIA 2, L. I., N. Y.



HIGH SPEED AUTOMATIC BAG-MAKING MACHINE

SWIFT . . . Produces over 4000 formed, sealed, delivered bags per hour. Speed is variable simply by turning a hand-crank.

STURDY, MODERN . . . Heavy construction, extensive roller bearings, patented sealing method, and other features make this machine dependable in service, up-to-the-minute in production, simple in operation.

DEPENDABLE BAGS . . . Heat-sealed throughout, bottom edges folded before sealing, for greatest strength. Strong seams with only one-half inch of overlapping material.

NEW ATTACHMENTS AVAILABLE . . . Many attachments are now available to adapt this machine to your particular needs: electric eye control, heat seal labeller, glue labeller, heat seal banding attachment, bottom crimper, glue line, tube maker. These and other attachments can be easily added at any time. Tell us of your requirements.

SEE OTHER SIDE FOR DETAILS. WRITE, WIRE OR PHONE

SIMPLEX WRAPPING MACHINE COMPANY

534-23rd AVENUE • OAKLAND 6, CALIFORNIA

MODELS No. 1 AND 4—
SIMPLEX BAG MAKING MACHINE

Simplex high speed automatic Bag Making machines are extremely flexible. Adjustments for size are made by such simple means as interchanging plates and the turn of a hand crank.

***Simplex machines** seal bags securely.* A double thermostat, incorporated into the machine as standard equipment, gives precision heat control for wide range of requirements from room temperature up to 500° F.

***Simplex machines** are highly adaptable to materials.* Any type of heat sealing bag making material for single or double wall, can be fed onto the machine from roll stock, can be swiftly and securely formed, sealed and stacked in bags of sizes and shapes to meet your requirements.

***Simplex machines** are remarkably economical,* both in original cost and in operation. Not only does their sturdy construction assure long continued use—the wholly automatic functioning of the machine makes close supervision unnecessary. The average man or girl can thread the roll stock into the machine, start the motor, take out the finished bags as they are stacked in the receiving container at the other end of the machine.

***Operation is as simple as the name.** Into this machine has gone the experience of many years of creating and manufacturing heat-sealing Bag Making equipment.*

SIMPLEX WRAPPING MACHINE COMPANY

534-23rd AVENUE • OAKLAND 6, CALIF.

Representatives:

MILLER WRAPPING & SEALING MACHINE CO., 18 South Clinton Street, Chicago 6, Ill.

AMSCO PACKAGING MACHINERY, INC., 48th Ave. at 31st Place, Long Island City 1, N.Y.

The Simple Facts

OPERATION:

Loading and threading to start the roll stock through the machine is manual. ***Operation is then fully automatic.***

SPEED:

Variable, to 70 formed, sealed, delivered bags a minute.

TYPE:

Model No. 1: Bags of flat and of gusset square bottom types, single or double wall. Instantly adjustable to any width up to 9 inches, any length up to 16 inches. (Attachment available for additional 4 inches length.) 24 inch maximum roll width.

Model No. 4: Simplex makes similar flat or gusset bags up to 12 inches wide, by 20 inches long. 30" maximum roll width.

MATERIAL:

Thermoplastic coated material in rolls, including cellophane, Pliofilm, Diaphane, Maralux, laminated sheets, etc.

SEAL:

Double thermostatic heat control, at ranges from room temperature to 500° F., thumb-knob adjustment. ***Additional sealing assures water-tight seal for frozen foods and other uses.***

ELECTRIC EYE:

For registering printed materials, available as attachment.

COUNTING DEVICE:

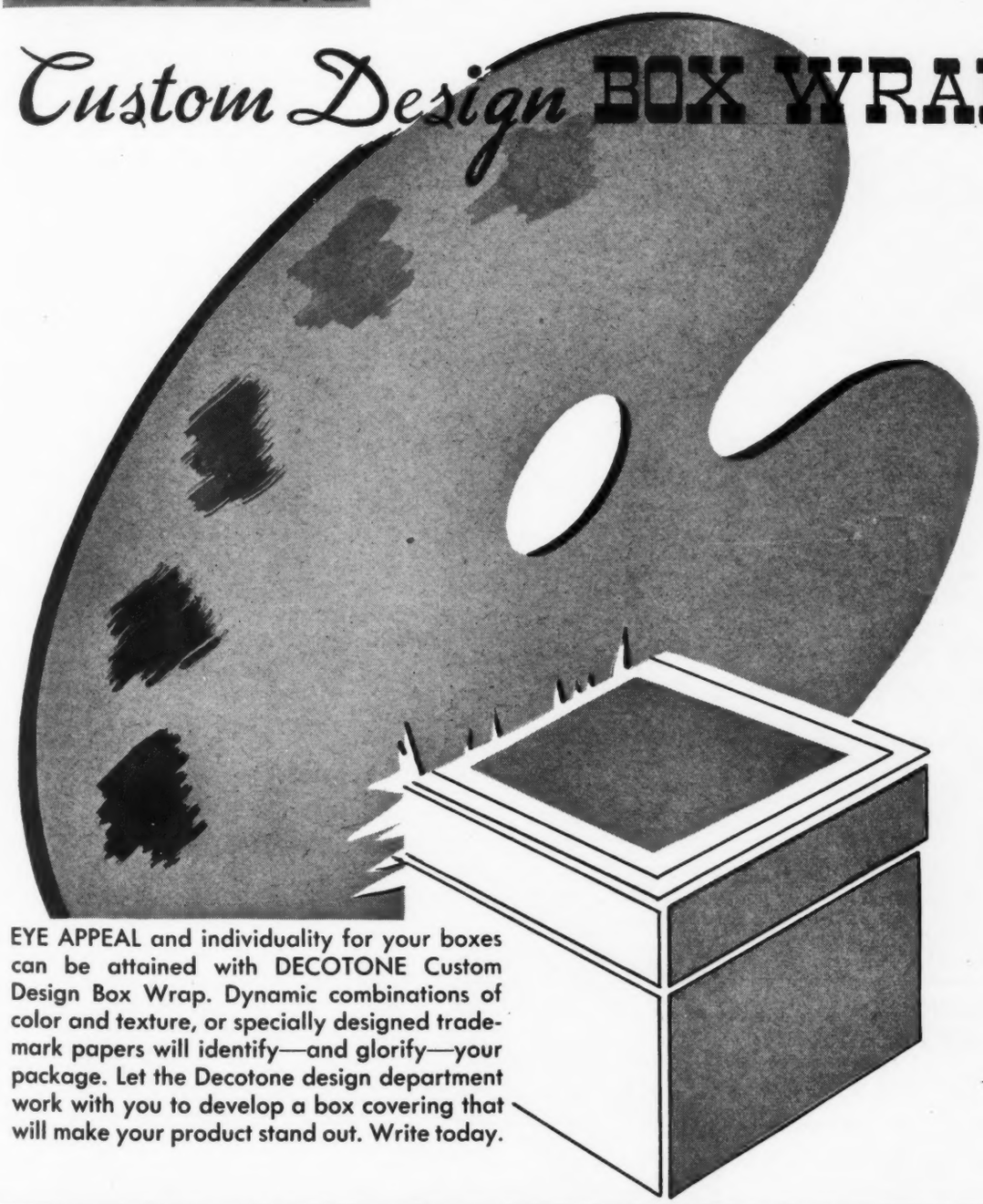
Automatic bag counter is standard equipment.

STACKING:

Completed bags are delivered and stacked in a tray for ready removal.

DECOTONE

Custom Design BOX WRAP



EYE APPEAL and individuality for your boxes can be attained with DECOTONE Custom Design Box Wrap. Dynamic combinations of color and texture, or specially designed trademark papers will identify—and glorify—your package. Let the Decotone design department work with you to develop a box covering that will make your product stand out. Write today.

DECOTONE PRODUCTS

DIVISION

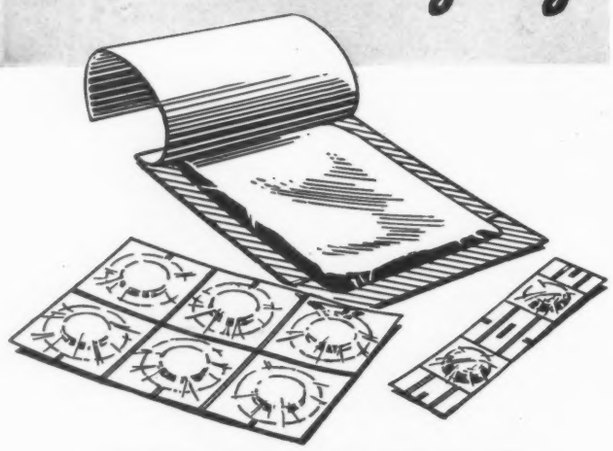
Fitchburg Paper Company

PACKAGING PAPERS *Converted Papers* SPECIALTY PAPERS

FITCHBURG, MASS.

*SANITAPE-SEALTITE

Basic Packaging



FOR A THOUSAND AND ONE UNIQUE AND OUTSTANDING PACKAGES

THIS patented method of packaging has never been equalled, since its creation by us. To date countless billions of pills, tablets and unit-powder doses have been wrapped by Sanitape-Sealtite in our Contract Packaging Plant — it has been the basis for many of the outstanding package creations. And this is quite natural, for unit-wrapping offers provably superior advantages — it is sound, practical, adaptable and appealing. Sealing each unit in its own air-tight compartment — protecting it from dirt, moisture, handling and breakage — providing a compelling, consumer appeal in convenience and appearance — Sanitape-Sealtite has deservedly won top place as a basic packaging for fine products.

Consider one of the units at the left — Sanitape or Sealtite or Powder Package — think of it as a mailing sample, a dispensing sample or part of a standard-sale package of practically any capacity. Picture it packaged with a single cover, double cover, catch-board folder or in a container of almost any size or shape — and realize that in every case, the product has been given most complete protection.

The packaging materials used in Sanitape-Sealtite are numerous, and in all cases, are determined by the chemical and physical properties of your product — it may be cellophane, foil, pliofilm, koroseal, thermoplastic coated papers or laminated combinations of several of these. There are few limitations and our thorough preliminary product analysis and merchandising survey, assure the use of the material which is *right for your product.*

ECONOMY OF UNIT PACKAGING IS A REAL CONSIDERATION for not only is there a distinct saving in shipping weight and the cost of packaging materials used; our Contract Packaging Service affords the manufacturer the economy of large-volume production and the efficiency of the most modern labor-saving devices. In our 100,000 square feet of light, air-conditioned space we (a) Receive your product in bulk (b) Store in bonded ware-rooms (c) Package by Sanitape-Sealtite (d) Insert literature if desired (e) Return finished packages to you, or drop-ship according to your instructions. We act as *your packaging department.*

Sanitape-Sealtite — the truly modern packaging — offers unusual and varied opportunities, both in sampling and standard-sale packages, for those who are interested in Better Packaging. If you outline your problem we shall be glad to give you complete and pertinent details.

BASIC TYPES OF UNIT PACKAGING

SANITAPE for large quantities in containers of limited size

SEALTITE for flat containers and more pretentious display

POWDER PACKAGE for powders, granules and crystals

METASEAL-PAK for unusual chemical product content and absolute moistureproof protection

MULTI-PAK for counter-sales packages of fixed quantities in a highly competitive market

C-PAK for a rugged, unit package with product visibility

EXTRUDO-PAK for creams, ointments, oils, liquids.

* Sanitape-Sealtite is a unique method for packaging pills, tablets, capsules, creams and powders, by which each unit is sealed in its own air-tight compartment, assuring convenience, protection and maintained efficacy.

IVERS-LEE COMPANY

NEWARK • NEW JERSEY

KIMBLE NEUTRAGLAS CONTAINERS

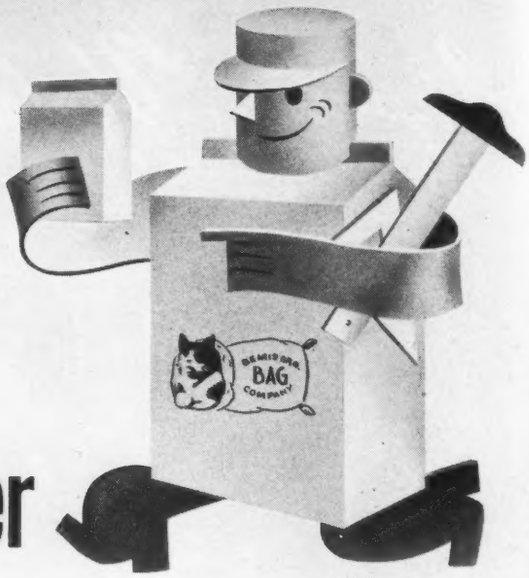
Ampuls . . . Vials . . . Serum Bottles

The complete container line for parenteral solutions—ampuls, vials, and serum bottles in a wide range of types and sizes, made of Neutraglas for utmost protection and resistance to chemical attack.

The Visible Guarantee of Invisible Quality

KIMBLE GLASS COMPANY . . . VINELAND, N. J.

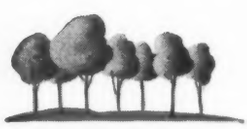
if you now wrap your product in paper



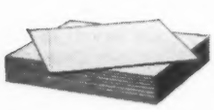
A bag may do your job better at lower cost

Yes, if you now wrap your product in paper, you may be wasting valuable time, material and labor in your packaging department that could be saved if you used *special paper bags*. The Bemis Paper Bag Specialty Division is giving manufacturers important savings by developing bags and methods of packing a wide range of products formerly hand-wrapped in paper.

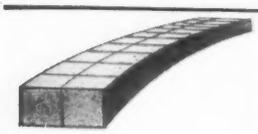
TREES • CANS • FIREBRICK AND PERHAPS YOUR PRODUCT



A waterproof paper bag saves time, materials and labor in wrapping trees. Trees ready for shipment are usually wrapped in paper. Now they may be slipped into special paper bags supplied by Bemis. Time and labor is saved, and the bag makes a better looking package.



4′ x 12′ sheets of wallboard are usually wrapped in heavy paper. A large paper bag has been designed to hold six sheets. This gives savings in labor and materials; frees valuable floor space in the packing department.



100-pound cubes of firebrick clay are unwieldy and hard to wrap in paper. A special paper bag speeds up handling and provides a more efficient protective covering.

SUBMIT YOUR PACKAGING PROBLEMS TO BEMIS

No matter what type or size of product you make, if you now hand-wrap in paper you may find new packaging economy in a *special paper bag*. Call Bemis today. There is no obligation.

BEMIS BRO. BAG CO.

PAPER BAG SPECIALITY DIVISION

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St. Louis, Missouri

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. . . WE HAVE IT!
Finding *exactly* the right material . . . of *exactly* the right texture or shade . . . at *exactly* the right price . . . often spells the success or failure of that new package design. Nine times out of 10 you can find just what you are looking for in our big stock of textiles, no matter how unusual the item you need may be in character or design. By all means visit our showrooms and acquaint yourself with our large and comprehensive line. If you can't come in and have a special packaging problem, write to us and we will do our utmost to solve it for you.
Large Variety of Satins, Bengalines,
Leatherettes, Suedes, etc., Always On Hand.
Frankel Associates
Display Fabrics and Accessories
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head to heels

. . . PROTECTED

With his catcher's mask, protector and shinguards, this ballplayer is ready for action. From head to heels, he's protected.

Thanks to the same kind of top-to-bottom protection, National cans are ready for service . . . providing all-around resistance to hard knocks . . . assuring your product's safe arrival.

National Can engineers have been busily and ingeniously solving special problems for individual can users. They are ready to help you whenever you tell them what's on your mind.

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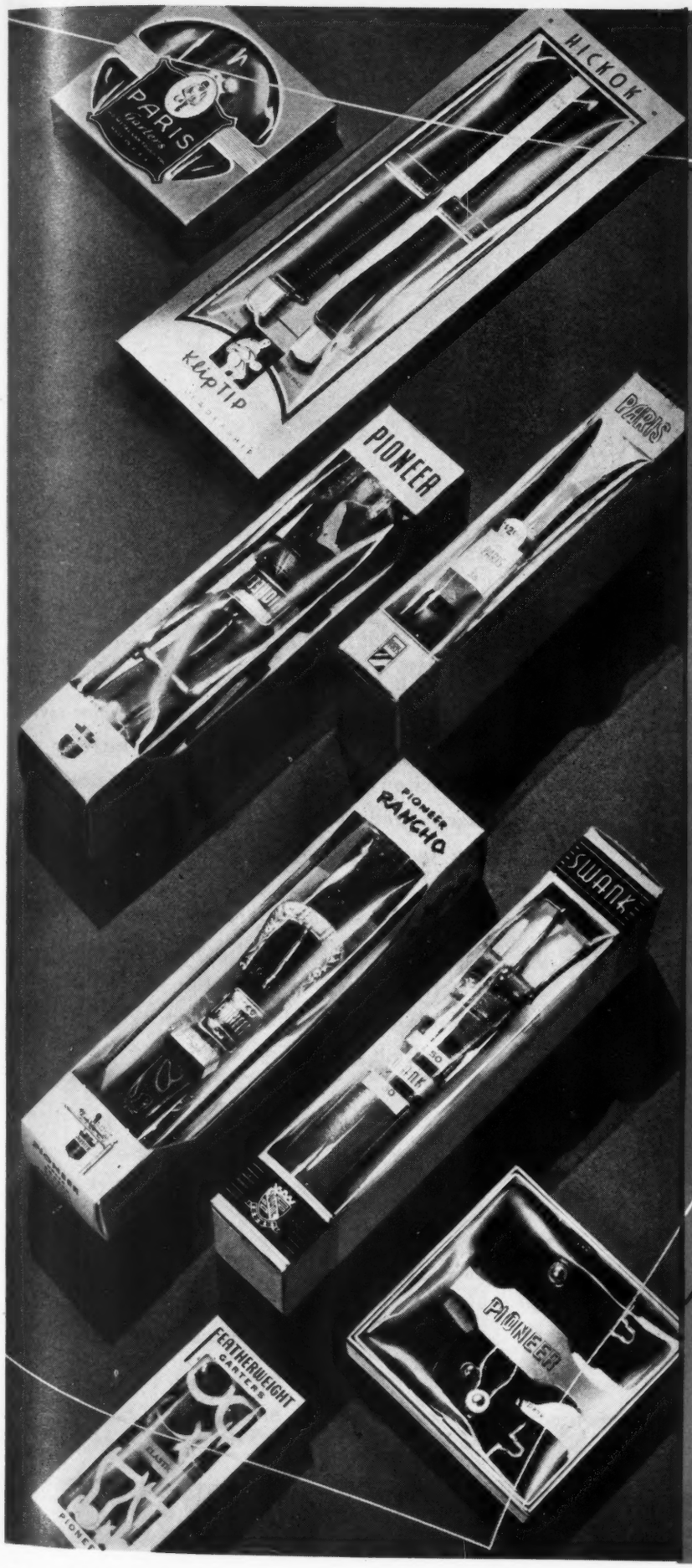
EXECUTIVE OFFICES: 110 EAST 42nd STREET, NEW YORK 17, N. Y.

Sales Offices and Plants: Baltimore, Md. • Chicago, Ill. • Hamilton, Ohio • Boston, Mass. Detroit, Michigan • Indianapolis, Ind. • Maspeth, New York • McKeesport, Pa. • St. Louis, Mo.



Top flight men's wear accessories demonstrate how *LUMARITH** SELLS ON SIGHT

The container with the Lumarith window delivers a powerful point-of-purchase sales message—by giving visibility to the product itself. In men's wear accessories, leading firms such as Hickok, Pioneer, Paris, Swank . . . know from experience the value of Lumarith transparent film packaging as a volume sales producer.

For windows, laminations, wraps and transparent containers, Lumarith film is wrinkle and stretch-proof, always fresh and sparkling; cements permanently; takes multi-color printing perfectly; does not dry out; and promises sure protection—even for products having a long shelf life.

Get in touch with the Transparent Films Department for specific and detailed information about this superb film for packaging.

Celanese Plastics Corporation, division of Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y., producers of *Lumarith**, *Forticel**, *Celluloid**, *Vimlite**, *Celcon*†.

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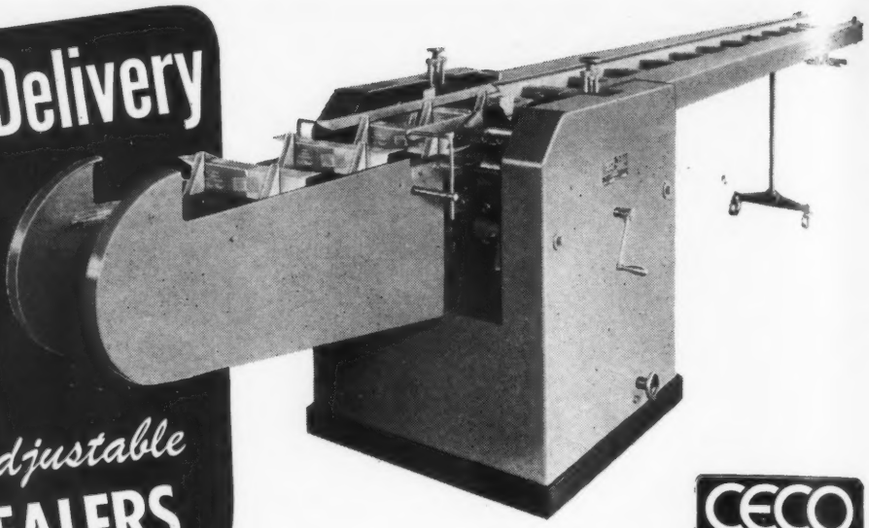
New, Faster Delivery Schedule For CECO *Adjustable* CARTON SEALERS



CECO

CARTON SEALER
MODEL A-3901-12

Illustrating the versatility of Model A3901-12 CECO Adjustable Carton Sealer are the variety of carton sizes and shapes which one machine can seal.

Here is good news for every concern with a packaging bottleneck. Delivery dates for CECO Adjustable Carton Sealers now on order are being advanced considerably. The recent acquisition of long awaited labor-saving machine tools has enabled us to increase our production materially. Current quotations specify delivery not in years or months as before, but in a few weeks from date of order.

We are beginning to reduce our tremendous backlog of orders to a point where we can, therefore, offer much better deliveries than heretofore. And the latest model CECO Sealers are built to new high standards of quality.

Send for our new bulletin describing important time- and labor-saving features just incorporated in the CECO Adjustable Carton Sealer.

Features

- ★ Adjustable instantly for different sizes and speeds without tools.
- ★ Handles any free-flowing, non-sifting product.
- ★ Seals both ends automatically, simultaneously.
- ★ Produces square, neat, tamper-proof cartons.
- ★ Portable, self-contained.
- ★ Automatic carton feed available.

CONTAINER EQUIPMENT CORPORATION

Packaging Machinery Specialists

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FABCOSE*

VERSATILE... NEW... AND UTTERLY DIFFERENT!
PLASTIC COATED PAPER THAT "ACTS" LIKE CLOTH!

DURABLE AND DECORATIVE
FABCOSE HAS A HUNDRED USES

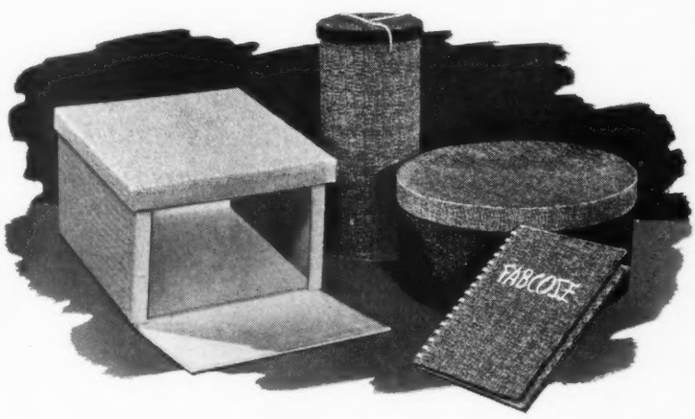
It can be cut, scalloped, sewn, pinked, pleated, glued, pasted, or cemented—with the greatest of ease!

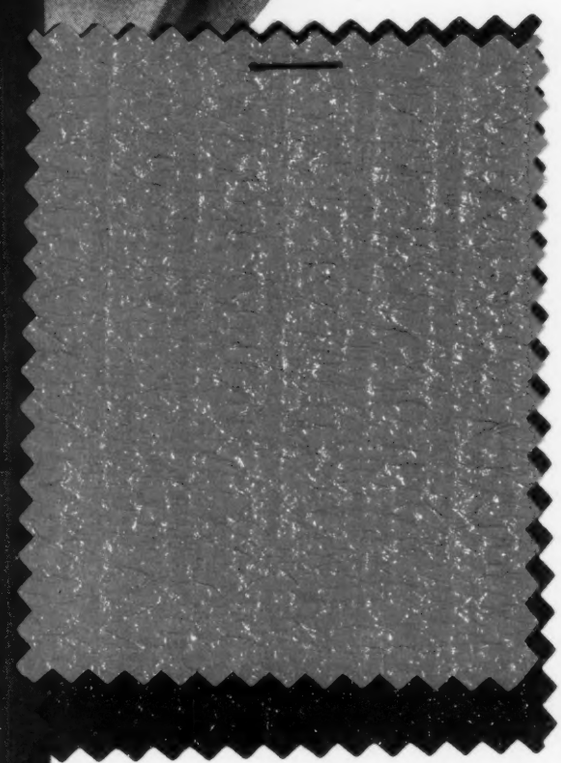
It resists heat, cold, water, oils, alcohol, wrinkles, creases, and cracks.

It wipes clean with a damp cloth.

FABCOSE *ADDS* STRENGTH TO ANY BOARD

See for yourself! Swatch booklet on request.





Fabcose is available in pastels, vivid colors and prints.

*Reg. U.S. Pat. Office

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DIVISION OF ELECTRO-TECHNICAL PRODUCTS, Inc.

Do you want to make a *better product* at a *lower cost?*

Then look into

American Anode latices and mixes

for coating and impregnating paper . . .

Without question, during the next few years the most important technical advances in the coating and impregnating of paper will be made possible by the use of American Anode latices and water mixes—*if* you will let us work with you on established products as well as new developments.

There has been so much recent progress in this field that it's doubtful if paper chemists and engineers have been able, in these busy days, to keep abreast of it.

There's ample evidence that in many cases we will be able to help you make a *better* product at a *lower* cost. Certainly, manufacturing will be simplified because water systems are inherently uncomplicated. They're materially safer, too; no dangerous explosive solvents; no cumbersome and expensive solvent recovery systems.

Latices and mixes of natural and synthetic rubbers, GEON, HYCAR, neoprene, and Saran are available from our bulk storage. For more information about the *modern* way to coat and impregnate paper, please write Department AC-1, American Anode, Inc., 60 Cherry St., Akron, O.

The American Anode laboratory in Akron is equipped with the latest and most modern paper testing equipment, and is staffed with people who know how to use it.

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INCORPORATED

NATURAL AND SYNTHETIC RUBBER LATICES, WATER CEMENTS AND SUSPENSIONS

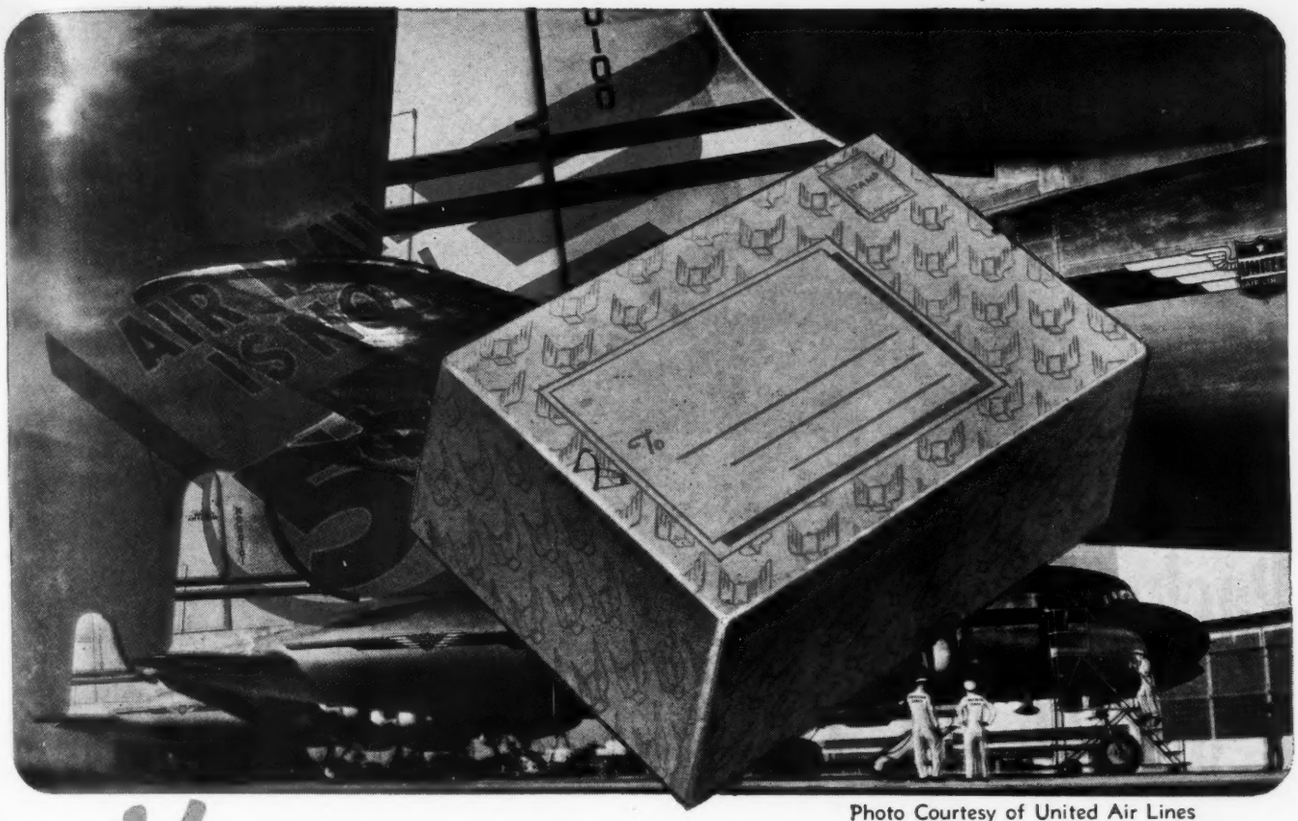
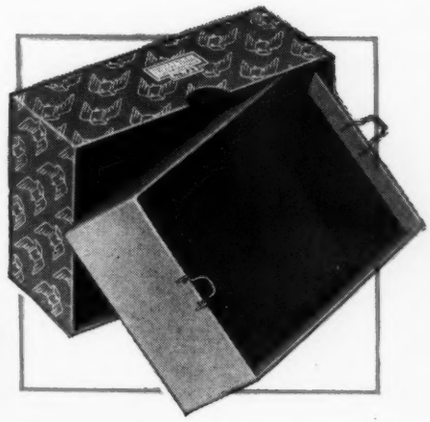


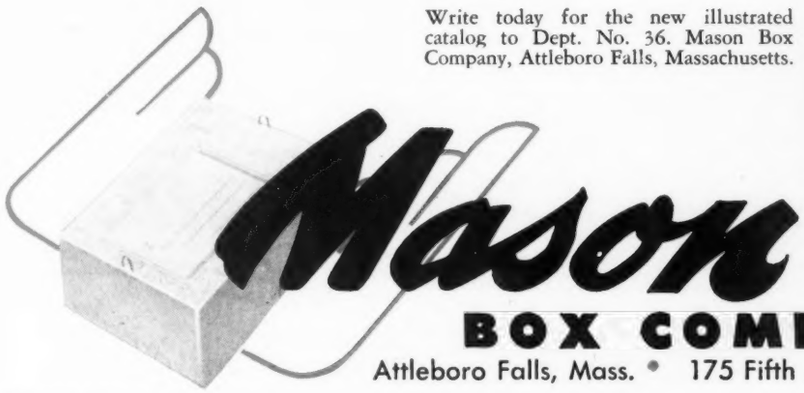
Photo Courtesy of United Air Lines

Now... MORE THAN EVER!

Postal receipts in the first few months of the new air mail rate show vastly increased use. People today are definitely air mail conscious. Why not speed up your shipment with air mail–in a Mason MailMaster, the accepted leader in air mail packaging. Its added strength, safety and convenience will appeal to your shipping department and your customer. For speed and safety — use air mail and Mason MailMasters.



Write today for the new illustrated catalog to Dept. No. 36. Mason Box Company, Attleboro Falls, Massachusetts.



Mason
BOX COMPANY
Attleboro Falls, Mass. • 175 Fifth Ave., New York City, N. Y.

MANUFACTURERS OF AMERICA'S NUMBER ONE BOX . . THE MASON MAILMASTER

Are Your Packaging Methods Geared To The Buyer's Market Ahead?

TIME is running out on a buying spree during which the majority were willing to purchase even inferior merchandise at exorbitant prices—

That time is at hand when business needs to weigh its products against *normal* consumer demand. . . To be sure that their quality is that to which the Trade was accustomed prior to the war. . . To see to it that its packaging meets the requirements and preferences of postwar's resale outlets. . . and that—*from container filling to shipping case sealing*—its policies, methods and equipment are modern, effective and economical.

Out of our quarter of a century of building packaging machinery for such luminaries as Kellogg's, Quaker Oats, S. C. Johnson & Son, Inc., Morton's Salt, I. J. Grass, Hershey, Armour, Seagram's, Dow Chemical, Anheuser-Busch, West Coast Canners & Packers, and so on—and particularly in the light of our wartime strides in material and mechanical know-how, our expanded facilities and increased personnel, we of PACKOMATIC are prepared to help you meet the challenge of the immediate future which all of us face:

(1) To produce better merchandise for less money, and (2) to make this merchandise more readily and more conveniently available—*in AAA-1 physical shape*—at no increase in cost to the consumer, and where possible, at a further saving to the producer or processor.

PACKOMATIC—through its 14 strategically located offices—welcomes the opportunity NOW to talk Container Filling or Shipping Case Sealing to any and all who are interested in doing these jobs better than heretofore. Suggestions are without cost or obligation to purchase. Simply submit your present (*or prospective*) packaging program. It will have the same thoughtful consideration given to a bonifide order—in the belief that whenever you are interested in packaging equipment you will consider PACKOMATIC first.

How can we best serve you at this time?

PACKOMATIC

PACKAGING MACHINERY

J.L. FERGUSON CO. JOLIET, ILL.

Chicago • New York • Boston • Philadelphia
Baltimore • Cleveland • Denver • New Orleans
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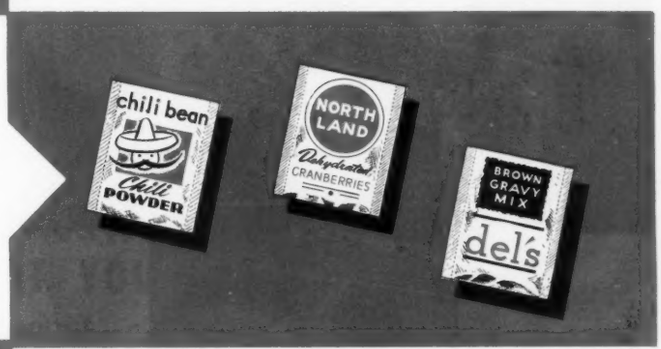
IT'S *Western* FOR *distinctive* PACKAGING PROTECTION

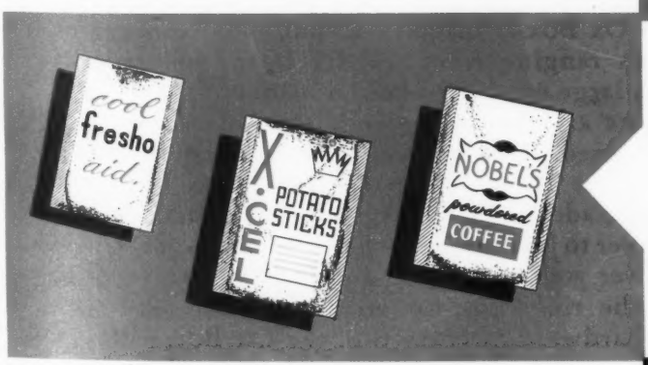
LAMINATED GLASSINE OVERWRAPS

Flavor-tight! • Moisture-vapor proof • Protective overwraps that guard against moisture gain or loss • Excellent for "hard to keep" powders and mixes.

LAMINATED AND COATED GLASSINE POUCHES

Plain or attractively printed pouches • Highly protective • Moisture-vapor proof • Grease proof • Easily heat sealed—positive closures.





LAMINATED AND COATED FOIL POUCHES

Plain or distinctively printed pouches • Another highly protective material • Because of its excellent moisture-vapor resistance, hygroscopic products can be safely, as well as attractively packaged • Easily heat sealed—positive closures • Many confectionery applications.

Western is also in a position to devise packages incorporating Pliofilm for commercial frozen food application.

More and more processors are coming to WESTERN for new, attractive, functional packaging that assures flavor freshness. The scientific technique devised by skilled packaging engineers combined with the best packaging materials available, assure you of distinctive packaging protection.

PACKAGING AND PLASTICS

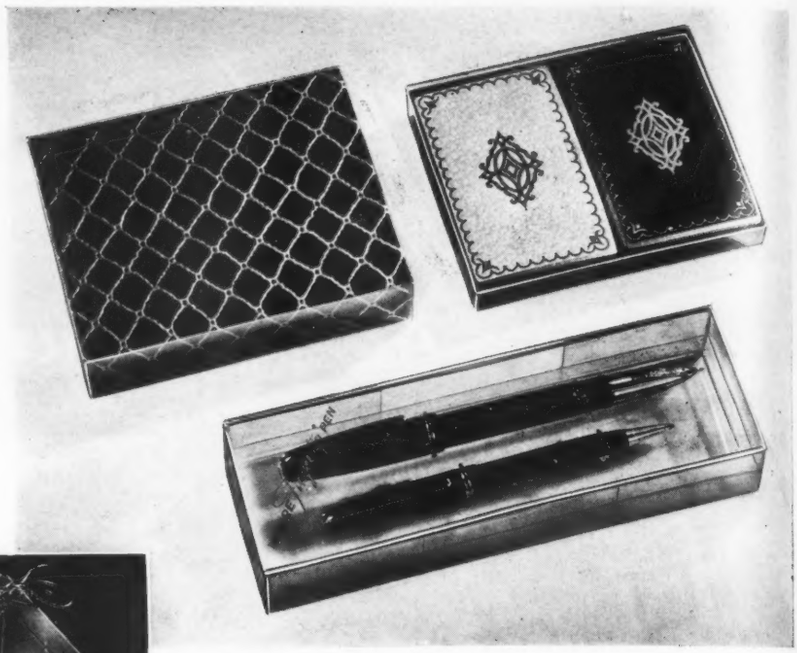
WESTERN PRODUCTS INCORPORATED

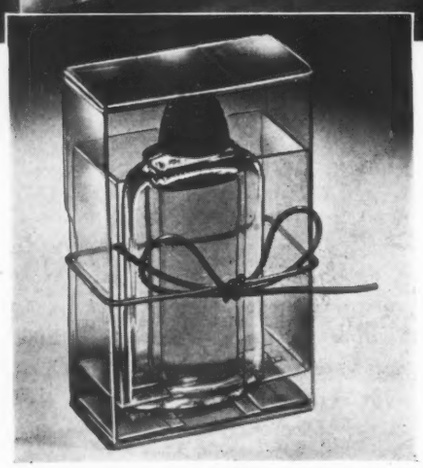
Creative Engineering in Packaging and Plastics

NEWARK, OHIO

CONVERTERS OF LAMINATED AND COATED METAL FOILS, TRANSPARENT FILMS, FABRICS, AND PAPERS

New Plastic Boxes are a Joy Forever





THAT'S because the new Ox Box folded plastic display boxes can be used over and over again. They are never thrown away.

Beauty and practicability combine in the new Ox Box to give packagers a unique display piece—with re-use appeal the added attraction.

Made from rigid cellulose acetate and vinyl sheeting, die-cut like cartons and folded with heat, these boxes are formed without cement or solvents of any kind.

The Ox Box is made in an unlimited variety of sizes ranging from jewelry boxes to containers large enough to hold a blanket.

Colors are limited only by the hues of the plastic used. The boxes may be opaque or transparent or a combination of both. They may be made with a variety of colorful, decorative paper to lend striking charm and eye appeal. Whatever your packaging requirement, we can make the right box for your particular need. From hardware to cosmetics, the Ox Box will give your product new sales appeal and your customers will use it again and again.

Write for information and samples.

We also license and furnish equipment for manufacturers desiring to make this sensational new plastic box.

JOHN H. OXLEY COMPANY OXBOX PAT. PEND. WATERTOWN, MASS.

The Box That's Never Thrown Away

JOHN H. OXLEY CO.

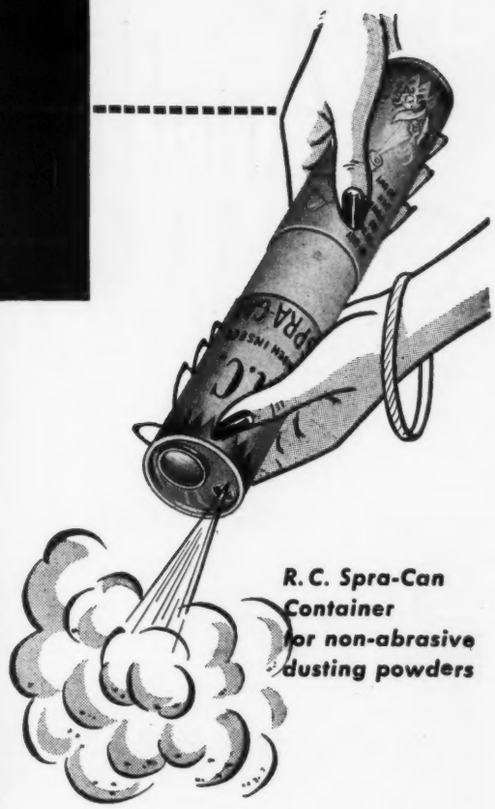
Manufacturer and Designer

8 CHURCH STREET • WATERTOWN, MASS.

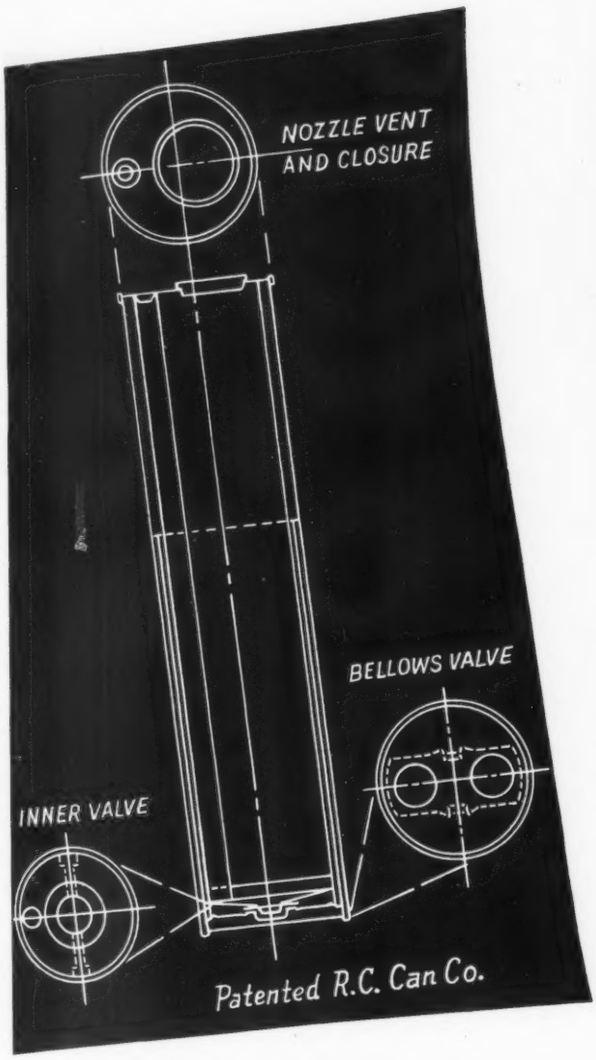
SO SIMPLE TO USE

SO ECONOMICAL

—yet another problem in design and manufacture



R. C. Spra-Can Container for non-abrasive dusting powders



PACKAGE ENGINEERING AT YOUR SERVICE

The Spra-Can container is a good example of the ingenuity of design and package-engineering skill that R. C. contributes to versatility in fibre can manufacture. It's the container with *action*— it operates in any position, at any angle, up or down. Those are a few of the features worked out by R. C. as well as right dimensions for volume and strength and good proportions for stacking, display and labeling surface.

Get in touch with us about your packaging problems and plans.

R·C · CAN COMPANY

R. C. CAN CO. The Stamp of Quality ST. LOUIS, MO.

Manufactures fibre cans, tubes, spools and cores

Branch Factories: Arlington, Texas, Rittman, Ohio and Kansas City, Mo.
Sales Offices: Minneapolis, New Orleans, Atlanta, Memphis, Milwaukee, Louisville, New York, Pittsburgh, Denver and Los Angeles.

Another Sales Winner!

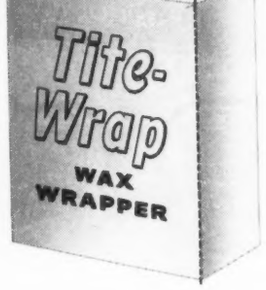
When the Fels Company, old timers in the field of laundry soap, put out soap chips, they wrapped their package with Tite-Wrap . . . for here is no ordinary waxed wrapper. Tite-Wrap not only keeps moisture out, but is low in cost, an integral part of the package and carries the design on its shiny surface . . . a combination of qualities that helped to make Fels-Naptha Soap Chips a sales winner. Deliver to your customers all of the good qualities you build into your products. Our experience is available to you.

NASHUA
MAKES PAPER MAKE MONEY FOR YOU

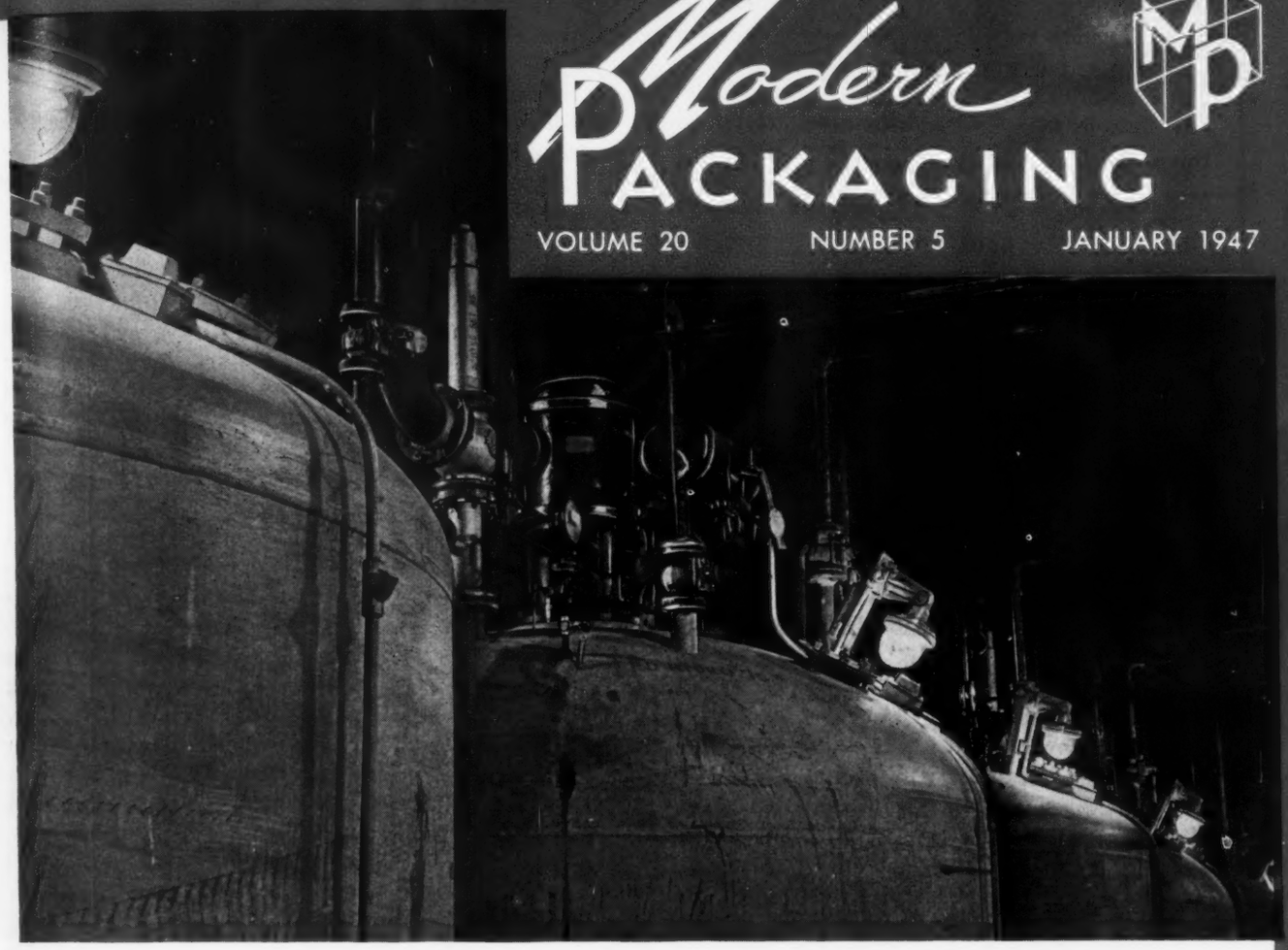
Nashua pioneered the development of a one side waxed paper applied to cartons by this tight-wrap method, — the only type of wrapper which provides all features shown at the right.

NASHUA GUMMED AND COATED PAPER COMPANY
NASHUA, NEW HAMPSHIRE

- Moisture proof.
- Package keeps identity when opened.
- Shiny surface carries design.
- Low in cost.



Modern PACKAGING
VOLUME 20 NUMBER 5 JANUARY 1947



Synthetic rubber still helps fill packaging needs. At Institute, W. Va., 72 reactors produce 90,000 tons a year.

OUTLOOK FOR '47

Every prognostication made for 1947 must be heavily interlarded with "ifs"—so many contingencies are dependent on other situations. As far as packaging is concerned, we go into the new year with a demand still substantially larger than in any of the prewar years—larger, perhaps, than in any year in history. The package fabricating facilities—apart from raw material considerations—generally seem adequate to take care of swollen demands. Depending upon the swing of general business conditions, the balance between supply and demand in raw materials may not be too far off.

The period after World War I had certain parallels: scarcities of goods; rising prices; wide-spread labor troubles; hoarding of inventories. When a minor recession set in, prices went down, orders were cancelled, wages and salaries were reduced, inventory losses occurred. Then came a period of prosperity.

Will history repeat itself? Of fourteen leading economists recently polled by the United Press, thirteen see a minor recession coming and only one thinks a major depression is ahead of us. Most of them foresee a period of price re-adjustment.

The prospect for adequate supplies of packaging materials and equipment is definitely better—in almost every category. The new year will bring more paper, cellophane, boxboard, closures, collapsible tubes and machinery—much more aluminum foil, cans, rubber and plastics. Any easing of today's excessive demand will quickly bring supply into balance at last.

Although packaging is still plagued by shortage conditions, the situation has changed in the last year in this respect: It is now an *excess of demand* rather than a *shortage of supply* that makes materials hard to get. Most important categories of

IN THIS SURVEY

Paper	p. 89	Adhesives	p. 95
Boxboard	p. 90	Textiles	p. 95
Metals	p. 91	Cellophane	p. 95
Glass	p. 93	Wood	p. 96
Plastics	p. 93	Pottery	p. 96
Machinery	p. 94	Rubber	p. 96

packaging materials were produced in greater volume in 1946 than in the last prewar year. We are catching up now on a scarcity period that endured for five years, but the demand for packaging is so far above what was previously considered normal that the net effect on the supply situation is that it remains what it was during the war years—you can't get enough of what you want when you want it.

In 1920 and 1921, faced with a seemingly insatiable demand, many businessmen lost their heads and plunged into unwarranted plant expansion. Many laid the depression of the '30's to this expansion. Now in 1947 there is a similar *apparently* insatiable demand, and it is imperative for every packager and package supplier to scrutinize that demand most carefully to determine whether it is real, bed-rock, and will continue indefinitely—or whether it may suddenly evaporate with a sudden swing in business conditions.

Economic sign posts that have been reliable in the past indicate quite clearly that American business is headed for a leveling off, a re-adjustment, early in 1947. It appears more than probable that the present chaotic conditions, the fluctuating markets and prices, resulting from a rather disorderly transition from a wartime to a peacetime economy, will very shortly shake down into a more normal situation; and in the process inflated demand will certainly be deflated.

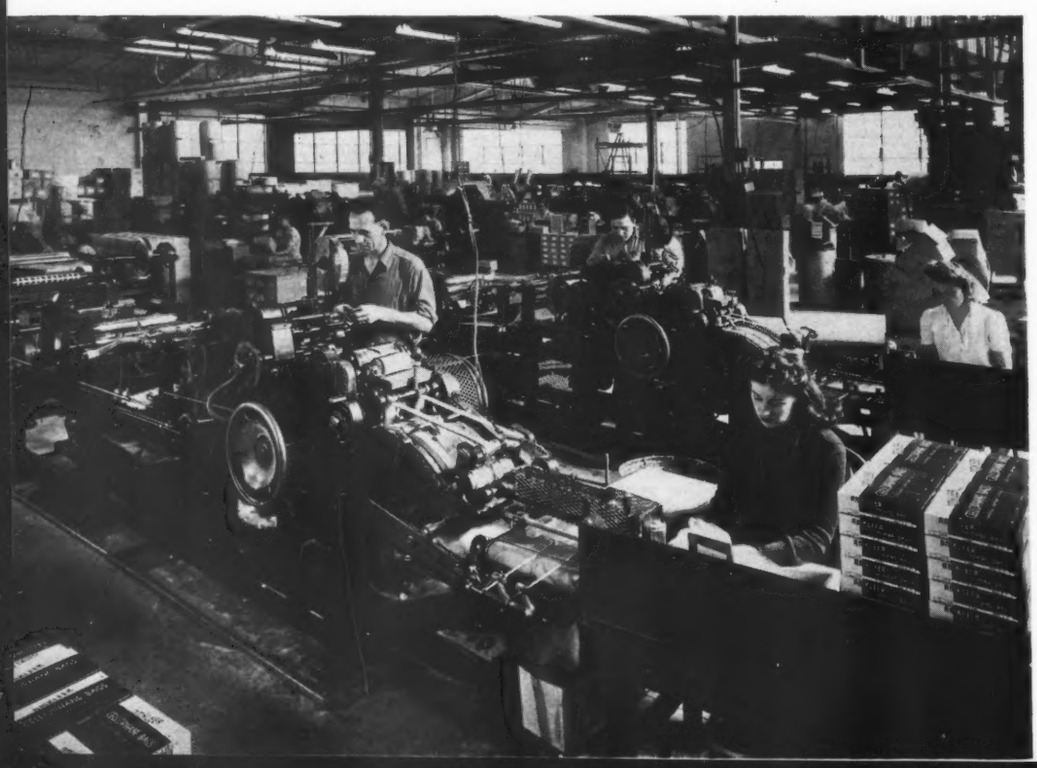
The smart packager, therefore, while continuing to make plans to deal with shortages, will keep himself on the alert for a situation that almost overnight might suddenly transform itself into an economy of comparative plenty; in other words, the present sellers' market might suddenly become a buyers' market.

One great unknown may upset all calculations and expectations; that is, the extent and duration of labor stoppages in key industries. Should 1947 be a year of continued labor turmoil, as some expect, all production may be held down to a level which would delay the supply-meets-demand balance and thus put off any general economic re-adjustment.

The other great handicap of the year just past is, of course, no longer with us. Regardless of the advisability or inadvisability of price control in the broad economic picture, there is no doubt that its complications and red tape did act to throttle packaging supplies in many cases.

Of course, not all excessive demand for packaging material can be characterized as inflated and unsound. The public wants more and more packaged products, and there are new fields—such as produce, meats, frozen foods, textiles—in which packaging is undergoing a real, evolutionary expansion. Regardless of general business conditions, it will probably be some time before there will be sufficient cellophane—to cite just one example—to provide for the adequate packaging of such products. In this and similar instances, the demand for specialized packaging material is not likely to be affected by temporary business conditions, for the demand is basic; filling it will require the completion of new production facilities, which may take months yet.

In the paragraphs that follow, an attempt is made to place side by side for comparison the normal production of several of the most important packaging materials with the production for the year just past and to indi-



Recent additions to package fabricating facilities have bolstered this phase of package production. Modern high speed equipment fabricates cellophane bags in the newly erected Chicago plant of the American Paper Goods Co.

PREWAR AND POSTWAR PACKAGING SUPPLIES

	PREWAR	1946	1947 est.
PAPER & PAPERBOARD (all uses)	12,036,421 tons	19,200,000 tons	20,500,000 tons
Kraft board	1,129,677 tons	1,650,000 tons	1,750,000 tons
Waxing, glassine & greaseproof	194,420 tons	348,000 tons	380,000 tons
Liquid-tight stock	(figs. unavailable)	52,000 tons	65,000 tons
Boxboard (folding)	1,385,000 tons	2,050,500 tons	increase
Boxboard (setup)	585,700 tons	462,000 tons	increase
Boxboard (misc.)	976,400 tons	1,250,000 tons	increase
METAL CANS (steel)	2,191,689 tons (19 billion cans)	3,000,000 tons*	3,470,000 tons (29 billion cans)
METAL CLOSURES (screw & lug)	5,677,000,000	16,080,000,000	increase
PLASTIC CLOSURES	675,000,000	2,000,000,000	increase
CROWN CAPS	20,725,000,000	43,200,000,000	?
STEEL DRUMS	16,349,000	27,500,000	increase
COLLAPSIBLE TUBES	540,000,000	1,000,000,000*	increase
ALUMINUM FOIL	20,000,000 lbs. (60% for packaging)	40,000,000 lbs. (70% for packaging)	52,000,000 lbs.
GLASS CONTAINERS	7,411,248,000	16,018,560,000	same or increase
CELLOPHANE	100,000,000 lbs.	125,000,000 lbs.	increase
TEXTILES (cotton bags)	458,760 bales	decrease	increase
ADHESIVES	(figs. unavailable)	100% increase	25% decrease
RUBBER (natural; all uses)	600,000 tons	400,000 tons	502,000 tons
LUMBER (all uses)	25 billion bd. ft.	32 billion bd. ft.	increase
PLASTIC MOLDING POWDER (all uses)	108,000,000 lbs.	334,000,000 lbs.	530,000,000 lbs.
PLASTIC FILM & SHEET	10,000,000 lbs.	17,000,000 lbs.	23,000,000 lbs.
MACHINERY	$15,000,000	$20,000,000	increase

*Rough estimate

cate what is considered to be the probable demand for the period ahead. Manifestly, the figures won't balance out with the accuracy of the accountant—some of them are purposely given in round numbers at the request of confidential sources—but an important over-all picture will be given to serve an important over-all purpose: that of helping package users and suppliers to plan for what is ahead.

PAPER

Plainly visible are improved prospects for pulpwood and pulp. During the second and third quarters of 1946 improved conditions in log-cutting operations increased pulpwood supplies materially and the removal of OPA controls was followed by a price increase which had an added effect in encouraging more production.

Prewar, the total paper and paperboard production (1935–1939 average) was 12,036,421 tons. The 1946 estimate is a total of 19,200,000 tons with a possible 20,500,000 tons for 1947. Packaging uses account for at least a third of this output—some say packaging consumption is as high as 60%.

Supply appears to be steadily gaining on demand. Discounting the possibility of labor troubles, although wood pulp may be difficult during the first few months of 1947, conservative prophets say that April 1 will see demand and supply in balance. Fortunately, the paper industry itself has been quite free of labor trouble, though it has had its full share of what the innocent bystander gets. Production facilities will not be pushed to the limit as the industry has ample productive capacity. During 1946 some American concerns got into production in their new Canadian mills, relieving the shortage in "market" pulp. It is expected that eventually American industry may be less dependent on overseas pulp. There appears to be a tendency toward a self-contained pulp production in North America.

Paper and paperboard production have consistently proceeded at a high level without being able to supply current demands. This gives rise to the question "Where is the paper?" It probably is not being held in jobbers' warehouses because 75% of the production consists of "making" orders for drop shipment as compared with 25% that passes through the jobbers' hands. This leaves the possibility that paper consumers are buying heavily for inventory. If this is the case, cautions one observer, such buyers may find themselves with a lot of high-priced material on hand when supply suddenly catches up with demand.

Principal shortage seems to be kraft paper, of which the prewar average production (1935–1939) was an annual 1,129,677 tons. Rigid controls and diversions to military needs during the war years produced a heavy deficit, which supply is gradually overtaking. Of late, label producers have also suffered severe shortages as to paper, but relief is now in sight.

Special types of papers are expected to hold some of the gains which war shortages of other materials enabled them to make. The 1946 production of waxing, glassine and greaseproof papers, for instance, will exceed 348,000 tons as compared with the prewar average of 194,420 tons and a probable need for 380,000 tons in 1947. Statistics were not available prior to 1945 for liquid-tight stock but that year produced 36,865 tons which grew to 52,000 tons in 1946 and a probable demand for 1947 of 65,000 tons. Paper production has suffered shortages in some chemicals, bleaches, coatings, etc., but these are gradually becoming adjusted.

BOXBOARD

The over-all production figures quoted above include boxboard production, but separate figures should prove of interest. In 1939, folding boxboard production was 1,385,000 tons. The estimate for 1946 is 2,050,500 tons, with the prospect that this will be somewhat greater for 1947. Set-up boxes accounted for 585,700 tons in 1939. This figure fell to somewhat over 462,000 tons for 1946, and the prospect is for a slight increase for 1947. Miscellaneous uses of boxboard for packaging purposes accounted for 976,400 tons in 1939; the figure for 1946 will top a million and a quarter tons and somewhat more than that for 1947.

Here, again, there is some ground for a suspicion that there is an inflated demand due to over-ordering for inventory. No one knows how much over-ordering there is, if any, because no one makes a public declaration when placing duplicate orders. Orders on hand with the mills represent a production backlog of 22 days as compared with the prewar average of eight days. Paper users might do well to watch this period as a signal that supply is approaching demand. There is little danger of over-production or over-expansion in this field; the industry is conservative enough to avoid undue increases in plant capacity, of which there is ample to supply normal demands.

Bags and shipping containers

A bulletin of the National Assn. of Purchasing Agents declares that decontrol is operating to restore price relationship for paper container quality. Paper bags of the heavy-weight type, the Association says, remain difficult to obtain in large quantities without advance scheduling. Voluntary allocation is still being practiced. Prices of multi-wall paper bags are influenced by the scarcity of textile bags and no early relief from the shortage is foreseen.

Solid fibre and corrugated paper box producers report backlogs of four to five months' production, continues the N.A.P.A. bulletin. Some relief in the shipping container shortages has manifested itself since the canning season ended. Price trend is upward. Paper cans and drums are being allocated to contract customers. Production continues to be hampered somewhat by shortage of paper and sheet steel for body and head stock.

New addition to the Elkhart, Ind., plant of American Coating Mills, Inc., adjoins the paperboard mill and permits a complete and continuous operation for making folding cartons. The company also has a new plant now in operation at Chicago.

METALS

The present trend is toward relaxation of controls of metals, though the following orders are still in effect:

M-21—Direction 9—Tin mill products for cans
M-38—Lead for tubes
M-43—Tin for cans
M-81—Metal cans

Late in December, announcement was made of amendments to Direction 9 of M-21 as well as to M-81, the effect of which was to make a very considerable increase in the number of products permitted to use tin plate. The can manufacturers point out that these modifications will do nothing to increase the tin supply and there is some feeling that plate specifications as outlined in M-81 should be retained.

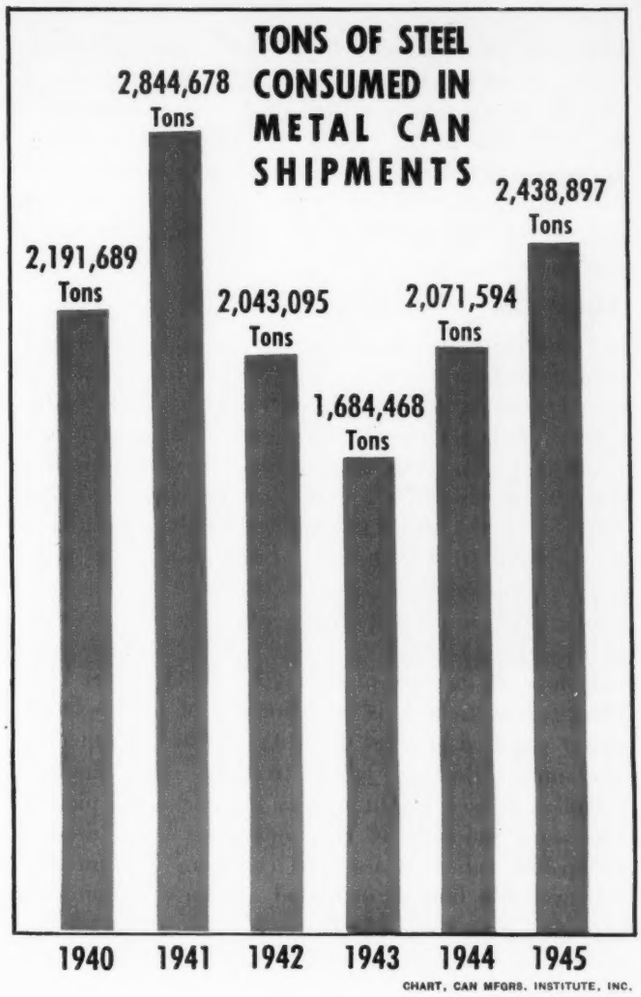
Metal cans

Steel required—1940...2,191,689 tons—enough for 19 billion cans
1941...2,844,678 tons
1943...1,684,468 tons
1945...2,438,897 tons
Estimated requirement for 1947, 3,470,000 tons, 25% over 1946—enough for 29 billion cans.
Tin required for the 1947 figure, about 25,000 tons.

Perishable foods have first claim on metal cans and record production of farm products for 1946 pushed the figure to a new total—double the prewar average. Production facilities in the can-making industry will not prove a bottleneck—availability of steel and tin are the important factors. Electrolytic capacity is ample, though hot-dip capacity is short—which does not matter much because tin is short also. Normal prewar import of tin was about 90,000 tons. Present importation is about half of that, the can industry's share being about 21 or 22 thousand tons. The steel mills are planning some expansion and part of the added production may make itself felt in 1947. Quantity of tin imported is expected to increase only slowly. Labor is still scarce and when the Japs took over, they removed small but vital parts of the equipment which have since proved hard to replace. For some little time, therefore, blackplate, electrolytic-coated and bonderite will continue to be used. When controls are entirely removed, voluntary allocation may be necessary. As to whether supply of tinplate cans will meet demand in 1947, opinions in the industry differ.

Metal closures

Closures of the screw and lug variety totaled 5,677 million units in 1940. This had increased to 9,900 million in 1945, and the estimate for 1946 is 16,080 million units. A further increase is expected for 1947. Crown caps: 20,725 million in 1940; 36,332 million in 1945 and 43,200 million for 1946. Metal closures and crown caps for 1947 will require 100,000 tons of steel—no insuperable production problem, provided strikes are avoided.



Steel drums

Prewar requirement called for 538,000 tons in 1940, from which the yield was 13,546,000 drums, 18 gauge and heavier, plus 2,803,000 light-gauge units. In 1941 the number of units jumped to 18,314,000 heavy gauge and 3,751,000 light gauge. In 1946 there was a further increase to an estimated 19,000,000 heavy-gauge units and 8,500,000 light-gauge units, calling for 654,000 tons of steel. Prediction is that 1947 requirements will run along about the same as the latter half of 1946 and that the supply will catch up to the demand some time during the third quarter of the present year. Here, again, steel is the principal bottleneck. There has been no unbearable shortage of the various lining materials such as paints, finishes, etc. And since the big steel strike, there have been no labor problems.

Collapsible tubes

As importation of tin increases, it will be cordially welcomed by this industry, because requirements show a steady climb since 1941. For the year 1940, the Department of Commerce estimated that over 540 million units were produced. In 1945 (latest Government figures available) this had increased to approximately 958 million units, with a further increase in prospect for 1947. The industry has ample productive capacity to meet requirements, but the material shortage, particu-

larly of tin, constitutes a bottleneck. Interesting sidelight: Food shortage in the Far East necessitated cutting the rice ration, resulting in decreased efficiency of labor in the tin mines. Very little, if any, of the current demand is fictitious—the industry is not taking on any new customers, its entire capacity being used for filling orders from established users whose requirements are well known.

Aluminum

Foil is the most important form of this metal so far as packaging is concerned. In 1939, approximately 20 million pounds of aluminum were used for the manufacture of foil, of which an estimated 60% went into packaging. By 1946, this had increased to 40 million pounds, of which 70% went into packaging. In the latter year, the use of foil was somewhat restricted by shortages of other materials. For instance, had paper been plentiful, more foil would have been used in laminated forms, but still there was no painful shortage of foil in 1946. Predictions are that 1947 requirements will show an increase of from 25% to 33% over 1946. Principal bottleneck is the shortage of hydro-electric power required in great quantity for the refinement of aluminum. Barring labor troubles, this material promises to be a bright spot in the packaging picture. Increasing amounts of this metal are being used in collapsible tubes. Cans and canisters of aluminum will probably find an increased use, as will aluminum caps and secondary closures. As base materials become more available, laminations of aluminum foil will likewise increase.

Aluminum drums are expected to continue their growth in usefulness. The 1946 production was slightly greater than the prewar figure for 1939, and despite unsettled conditions, the 1947 production will be at least the same.

Aluminum producers have for some time recognized the fact that intelligent sales effort is a current necessity. It is not impossible, according to some opinions in this field, that the present sellers' market may suddenly find itself transformed into a buyers' market. But to keep pace with conservative estimates of increased uses, production facilities are being increased to produce various forms of the lustrous metal. These increased facilities—unless labor troubles prevent—will make themselves felt before the end of 1947. Not much change is predicted in aluminum prices.

Other metals

The prewar 10-year average domestic production of lead, according to figures gathered from various sources by the publication *American Metal Market*, was approximately 392,000 tons per year. In spite of strikes during 1946, the lead production amounted to about 420,000 tons. Lead will probably continue to be in short supply, although the production figures improved when price controls were dropped. The industry is looking for a gradual increase to correspond with what it considers proper pricing. Strict allocation will probably continue in 1947 because of worldwide shortages of this metal.

The 10-year average of zinc production, according to the same authority, was approximately 420,900 tons per year. In 1946 the production was in the neighborhood of 757,000 tons. The prediction is that this will see gradual increase, depending on the amount of cooperation given to the industry by labor.

Copper is likewise short and will continue to be allocated. Our prewar production, according to records

Typical step taken by package fabricators to increase raw materials supplies is this entire town carved out of the wilderness on Lake Superior's north shore by Marathon Corp. to support new pulp mill with 300-ton daily capacity.

Glass containers have demonstrated their ability to substitute for metal and will continue to serve as packages for many products where visibility is an important sales factor.

kept by the *American Metal Market*, averaged in the neighborhood of 535,000 tons and in 1946, in the face of all obstacles, this figure increased to nearly 650,000 tons. Informed figures in the industry look for a further gradual increase in 1947—always with the big "IF" in the foreground of their thinking.

GLASS

Glass container sales continue at record levels, although recently a definite lid has been put on production figures because of Federal limitation of soda ash.

Production figures for glass are given in thousands of gross. The 1939 prewar figure was 51,467 thousand gross (translating this into units, the figure becomes 7,411,248,000). The 1946 production will probably exceed 111,000 thousand gross. (Again translating, this means 16,018,560,000 units.) The 1947 production figures could equal or exceed those of 1946 as far as the capacity of the industry is concerned. Whether this will be the case or not depends on a number of more or less intangible factors, chief of which is the question how much of its gains glass will hold when other short materials become available. (Anybody's guess goes—the editors of MODERN PACKAGING refuse to speculate. One member of the industry estimates that the total volume will recede to about 80% of the present peak load.)

Second factor is the revocation of L-103. Glass makers estimate that if special molds return in anything approaching former volume it will mean a decrease of 20,000 thousand gross per year (2,880,000,000 units), a drop of perhaps 17% to 20% from the 1946 production. Since the 1946 demand was 20% to 25% more than the supply, the glass makers pretty generally are reluctant to resume special molds, certainly at present. Mold makers are still scarce and the labor supply in this important field is not likely to increase. So far, there have been no bad results from the revocation of L-103, probably largely because at present glass users prefer stock molds in quantity rather than limited supplies of special molds.

Soda ash shortage was aggravated by the Government diversion of that ingredient for aluminum manufacture. Already, however, a little relief is in sight for 1947. It is expected that the American Potash Co.'s new mill will come into production later in the year with a production capacity of 60,000 tons. The glass industry has no desire to see compulsory allocation of soda ash.

Plant capacity of the industry generally is adequate for normal demands. In fact, whereas glass production doubled during the war years, that increase was accomplished without increasing plant capacity. Now, however, some new mills are under construction, most of them being constructed to take care of West Coast requirements.

Decontrol was followed by a price increase of perhaps 8%. Further price increases may be in the offing if the cost of chemicals and transportation increases.

PLASTICS

The growth of plastics generally has been amazing. In packaging, while there have been gains, the increases are not so phenomenal as compared with their general growth for other uses. A good barometer might be molded plastic caps. The figures show that 675,000,000 plastic caps were used in 1939, requiring roughly perhaps 6,500,000 lbs. of molding compound. In 1946 estimates have it that more than two billion molded plastic caps were produced, requiring possibly 20,000,000 lbs. of molding compound. That is, molded cap

production trebled while production of molding compounds generally was growing to seventeen times its prewar volume. The end is nowhere near in sight for the further growth of plastics; expansion of its packaging uses will naturally grow, too, though probably not at anything like the same rate. In the over-all picture, according to some experts, packaging accounts for 20% of all plastic materials produced.

Estimated Total Molding Powder Production

	Prewar	*1946 Estimate*	*1947 Anticipated*
Urea	15,000,000 lbs.	34,000,000 lbs.	50,000,000 lbs.
Phenolic	65,000,000 lbs.	140,000,000 lbs.	170,000,000 lbs.
Polystyrene	800,000 lbs.	60,000,000 lbs.	150,000,000 lbs.
Cellulose acetate	12,000,000 lbs.	84,000,000 lbs.	105,000,000 lbs.
Miscellaneous	16,000,000 lbs.	16,000,000 lbs.	55,000,000 lbs.

Urea and phenolic shortages are due to scarcities of basic chemicals and in some degree to labor troubles. Alternate materials may be at hand for closure manufacture in the form of polystyrene and to a lesser extent in the form of polyethylene, provided nothing happens to prevent production of those materials.

In the opinion of an executive prominent in the field of raw material production, the big gap between the available supply of plastic materials on the one hand and fabricating and molding capacity on the other will continue for a number of years. A recent survey made by *Modern Plastics* magazine names three factors as dominant in the current plastic picture:

1. Unquenchable demand from customers
2. Expanding processing plant
3. Inadequate material supply

Molders forecast phenomenal raw material needs for 1947 and complain bitterly about cancellations made necessary because of non-receipt of raw materials. With controls removed it is expected that prices will rise and in the long run this may be expected to balance demand and supply, doing away with the allocation system which many customers regarded as arbitrary.

Faced with such a materials situation, any quantitative measurement of the volume that will be used for packaging is out of the question—like every other department in the plastics picture, packaging will probably take all it can get. In the past, plastic materials as used for packaging have for the most part contributed heavily to the decorative side and there are now appearing plenty of utility applications.

A tremendous growth may be expected in the use of plastic films. The prewar production of cellulose acetate for sheets, rods and tubes (which includes the film form) was about 10,000,000 lbs. In spite of the military need for the raw materials, the figure by 1946 had grown to 17,000,000 lbs. and a production of 23,000,000 lbs. is anticipated for 1947. Freed from the necessity of military requirements, this material may be expected to play an increasingly important part in both decorative and utility packaging. Other plastic films, for which no production figures are available, are ethyl cellulose, vinylidene chloride and polyethylene. Polystyrene in sheet form also gives promise of packaging applications. Boxes of rigid transparent sheeting were in common use prewar and have been appearing in considerable numbers since. New equipment is being perfected for the automatic fabrication of such packages.

The fabricating and molding facilities generally are adequate. The bottleneck is a short material supply which will probably continue well into 1947.

When this 14-ton roll of paper was made, it passed the 4-billion-pound mark for kraft produced at the Union Bag & Paper Corp.'s Savannah, Ga., plant, where the average daily output is 25,000,000 paper bags. PHOTO, CALIFORNIA PACKING CORP.

MACHINERY

Statistics of significance are virtually unobtainable in the field of package machinery because the units present such a tremendous variety as to size, tonnage and price. Back in 1939, the 20 or 25 members comprising the Packaging Machinery Institute did a total volume of over 15 million dollars. Since then, until V-J Day, packaging machinery had been virtually shelved to make way for war work. The Institute now has double its 1939 membership and has resumed manufacture of packaging machinery at full blast. In the absence of actual figures, informed persons in the industry estimate that the 1946 volume of packaging machinery as a whole will be $^1/_4$ to $^1/_3$ greater than the prewar production. Because all manufacturers in this field have a sizable backlog of orders, production will undoubtedly continue at full volume for some time to come.

There is little or no fictitious demand in this field. For the most part, these units are custom tailored and the makers represent a very high degree of specialization, so there would be no point or possibility in placing duplicate orders. The backlog picture is spotty. Some of the manufacturers declare it is impossible to promise deliveries prior to 1949, but others are making shipments of new orders on short notice. All are gradually catching up on their backlog. The buyers' market is definitely beginning to appear.

Current bottlenecks are found in shortage of chain,

electric motors and gray iron castings. Foundry labor is still very scarce. Wartime losses of foundry manpower are not being replenished. Relief will come when the general labor picture improves and when other industries have caught up.

There is something of a possibility that the field may become over-expanded, although the established concerns for the most part have been very conservative about expanding their plant facilities, feeling that once the supply catches up with demand the volume of business will recede to something resembling the prewar norm. Offsetting this, of course, is the fact that the general demand for packaged merchandise is steady and growing. At the same time labor continues to be a problem; and this combination of circumstances calls for increased mechanization and higher speeds in package production. Small wonder that new concerns are entering such an attractive field, although—because of the industry's long period of manufacture required to engineer and produce a complicated unit like a packaging machine—it may be some time before their influence is felt.

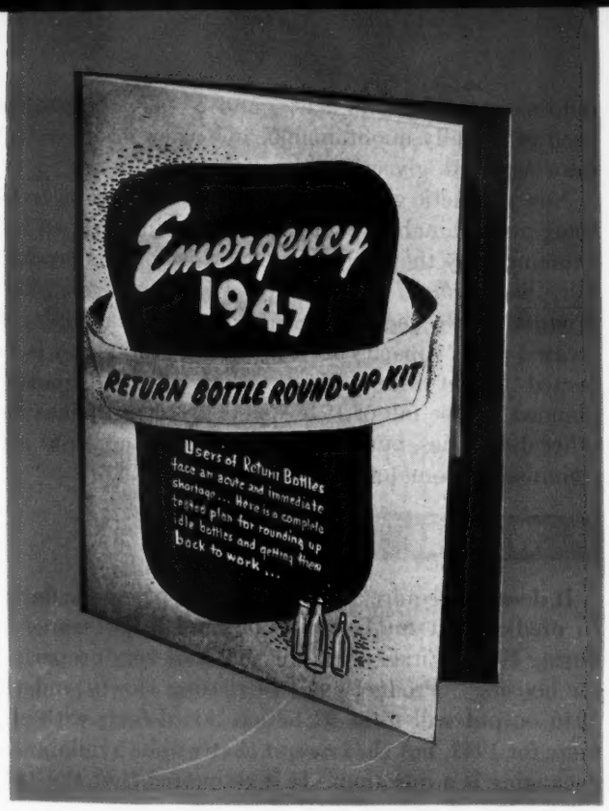
ADHESIVES

The highly competitive adhesives industry does not disclose any statistics, though it will admit that volume of production has doubled since 1939 and that 1947 will see a decrease as compared with 1946, perhaps amounting to as much as 25%. This decrease is not viewed with alarm—quite the contrary, for it is felt that there is something unhealthy about the present demand and that the situation will become nearer normal during 1947 as supply overtakes demand.

Packaging takes 65% to 70% of the products of the adhesives industry. Present bottlenecks are seen in shortage of certain chemical ingredients, scarcity of metal drums for shipping and the lack of caustic soda. Most of the shortages, it is felt, will be relieved during the first half of 1947. Tapioca, important element in adhesives for many kinds of packaging, still refuses to enter this country in prewar quantities. The driblets arriving from Brazil and Santo Domingo cannot begin to take the place of Java importation and that won't reappear until order has been restored in the Far East. Meanwhile, the industry is doing pretty well on corn starch, though in some cases corn adhesives have the effect of reducing production speeds. Spokesmen for the field are confident that 1947 will be a good year for packaging, therefore for adhesives. The industry's productive capacity is ample, deliveries are quite prompt.

TEXTILES

The end of the sellers' market is in sight in the general textile field after a protracted period of severe shortages. Production has continued relatively unimpeded since the war's end and prediction is that supplies of cotton goods may balance demand by mid '47. Jute and other imported fibres are beginning to come in.


Emergency
1947
RETURN BOTTLE ROUND-UP KIT
Users of Return Bottles face an acute and immediate shortage... Here is a complete tested plan for rounding up idle bottles and getting them back to work...

Raw material shortages forbid further expansion of glass container production and re-use is still essential. Program for 1947 bottle roundup is outlined in Owens-Illinois Glass Co. portfolio.

This market is quite sensitive to small price fluctuations and users shift quickly to other forms of packaging—if cotton prices remain high, for instance, and if paper comes back into plentiful supply as it promises to, then there will be a considerable falling off in demand for textile bags in 1947. One device to hold the market will continue: the use of cotton prints, usable for dresses, to make flour bags sold in rural areas.

Total prewar use of cotton for bags accounted for nearly half a million 478-lb. bales—the 1939 figure was 458,760 bales—of which flour, sugar and feed each consumed roughly 75,000 to 90,000 bales.

The burlap bag situation, according to the National Assn. of Purchasing Agents' bulletin, is extremely acute; production being limited by raw material shortages, unsettled Indian price situation and U. S. Maritime strike. Buyers have turned to cotton goods which are being offered for the first half of 1947 at very profitable prices for bag construction. Supply, says N.A.P.A., will equal or pass demand toward the end of the second quarter.

CELLOPHANE

Approximately 100,000,000 lbs. of cellophane were produced in 1939. Approximately—and that's the best you can do statistically in regard to a product made by only two producers—125,000,000 lbs. were produced in 1946. The packaging field would have absorbed almost any additional quantity. But cellophane has been very scarce for a number of reasons. During the war its use, of course, was restricted for military reasons. Then the

pulp shortage became acute, and of late glycerin has been practically unobtainable, and when price controls were removed, glycerin skyrocketed.

Now synthetic glycerin appears on the horizon, to become an obtainable reality some time in 1948, so it is announced by the Shell Chemical Corp. This product, cellophane manufacturers say, will serve cellophane production excellently when it comes. Meanwhile, increased plant capacity for cellophane production is expected to get into action. Some of the expansion planned for the fall of 1946 was delayed by strikes and other difficulties, but 1947 will doubtless see it put into commission, some of it perhaps by April.

WOOD

It does not require any prescience or prophetic daring to predict that lumber will continue to be scarce all during 1947. First call on this material very properly is for housing. Production is increasing slowly and the 1946 output will total 32 billion board feet, with still more for 1947, but the amount that will be available for packaging is a question. It is estimated that the 1946 production of wooden packages will be approximately 10% less than the last (1941) prewar year. The export market will undoubtedly expand, calling for more wooden boxes than ever, but procurement of shooks, barrels, crates, pallets and boxes will be difficult and deliveries unforeseeable. A bulletin from the Wirebound Box Mfrs. Assn. offers the consoling note that "Government officials are cognizant of the needs of the container industry and have assured the box manufacturers that they will receive their share of existing supplies." For added measure of discomfort, it should be noted that nails and wire are likewise short, with relief depending on the general steel situation. Meanwhile, the Wirebound Box Mfrs. Assn. is sponsoring a program to develop substitute materials for boxes, on which reports may be expected at least by mid '47. Another Association project calls for improvement in box-making equipment.

POTTERY

Those who have wanted to use pottery containers but could not get them, may find the supply situation a little better in 1947. Potters who for the past few years have been making luxury goods—vases and other decorative gimmicks—because they bring a better price than jugs for packaging may find that consumer money is a little tighter for this kind of bric-a-brac. As a consequence there may be a lesser demand for this type of product and the potters, it is believed, will be more anxious to take orders for jugs. The labor situation in the pottery industry, which requires a considerable amount of hand work, is also expected to be better in 1947. This labor situation has been one of the chief bottlenecks in pottery production because it was scarce and high priced, thereby adding greatly to production costs of containers.

Demand for pottery for the packaging of honey, cheese, liqueurs, maple syrups, toiletries is still greater than available supply, but users can probably look to receiving considerably more than they have in years.

No figures on the over-all quantity of ceramic containers used in packaging are available, but best sources in the field all say that demand has been steadily upward over a long period of time.

RUBBER

Some of the more sanguine prophets have it that rubber imports for 1947 will be up to the prewar figures, which varied from a total of 440,000 to more than 600,000 long tons. For 1944 the figure—for obvious reasons—had fallen to 100,000 tons, with only slightly more than that for 1945. But in 1946 crude production was resumed on a considerable scale and we received better than 400,000 tons.

Meanwhile, the packaging field has been getting a share of synthetic rubber and reports that for sealing compounds for tin cans the synthetic product is superior to natural rubber, though for glass containers the natural rubber is preferable.

Packaging uses of films and coatings derived from natural rubber received a severe jolt when the war came, but as imports return to normal it may be expected that these applications will be resumed.

THE SHOW WILL GO ON

From the foregoing review of current statistics and opinion in the principal fields of packaging material, it is evident that the general picture is more encouraging than it has been in many a long moon. That does not mean we are out of the woods yet, by a long shot, and production of packaged merchandise can not hold its breath until supply and demand are in balance—the show must go on.

It *is* going on. The average purchasing department today presents a pretty hectic scene, but somehow the procurement problems are being solved. Pre-planning is more important than ever. One company has worked out a very exact schedule of requirements for its packaging materials, anticipating its needs fully six months in advance and specifying deliveries to meet those needs.

Another company reviewed all its container specifications to see if economies could not be made in the amount of board used. Revisions have been adopted that saved more than 50,000,000 sq. ft. during the first 10 months of 1946.

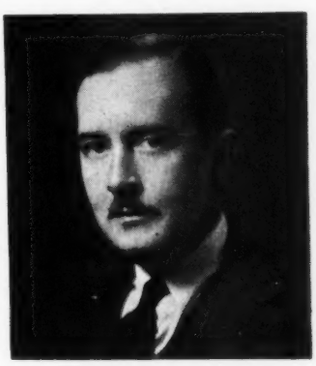
Re-adjustment is in process. How long it will be before the process is completed depends on many factors, chief of which is doubtless the labor situation. The gleams of light are brighter now than they have been for a long time. If the balance between demand and supply comes in 1947—as some think—the shrewd packager will regard that as a gift from Heaven. But meanwhile, he will go on planning for continued shortages. He will anticipate his requirements as far ahead as possible, and will hold himself in readiness to shift his plans on short notice. We are not yet out of the woods.

This month's COVER PACKAGE*

THE PROBLEM: To develop a highly distinctive package for a new line of table wines intended for the mass market, using a stock bottle but attaining individuality by means of a label, neck label and supplementary closure. These are to be simple but sound, low-priced wines, one of the French and one of the Italian types, to be marketed through mass display principally in food stores. Using the brand name "Amici," the two wines should have related labels, yet should be distinct as to type. It is imperative that the labels reflect quality and good taste, yet convey the idea that these are table wines for everyday use—not vintage wines to be reserved for rare occasions. The whole marketing program is built on the idea that Americans are steadily increasing the use of wine with meals, and that this trend will now be accelerated because millions of our boys who served in the European theater during the war were educated in the Continental custom.

THE SOLUTION: The designer immediately hit upon the idea of labeling the wines as "French type" and "Italian type." This permitted the use of the two distinctive national tri-colors as the distinguishing marks in the labeling. Note that the labels are identical except for the words "Italian" and "French," and the red-green-and-white border on one, the scarlet-blue-and-white border on the other. The type of wine contained can be determined at a glance. This simple device alone met the primary marketing requirements—related yet distinctive labels, having a gay feeling in character with the product, yet conveying an impression of dignity and quality. The style of lettering and balanced arrangement of the label elements, with the stylized "A" trademark, also help to establish the desired character. The trademark is repeated on the wine-colored cellulose sealing cap. The octagonal shape of the main label is interesting; it gives an unusual touch to the stock bottle and makes it look fatter than it is.

THE DESIGNER: Georges Wilmet was born and educated in Belgium, has traveled widely and is now an American citizen. He has been active in package design here for nearly 20 years. His list of clients reads like the Who's Who of American industry; his packages will be found on the shelves of almost every food, drug and liquor store. He has won a dozen All-America awards, starting in 1932 with the O'Cedar wax cream package and including 1935 (Pinaud products); 1937 (Dixie Cup-Pak carton), and later Carstairs, Calvert, John H. Woodbury, Rath Packing, Hildick's, Vitalis and Fleischman products. He has also won awards in the Wolf and other competitions. This month's Cover Package is characteristic; it demonstrates Mr. Wilmet's ability to convey forcefully and directly, through the medium of the package, the nature and quality of a product.



GEORGES WILMET

* Brand and company names used in this hypothetical design are purely fictitious; the design remains the property of the designer who conceived it for this cover illustration.

TRANSITION

Customer may select full frozen food line from modern open cases. PHOTO, HUSSMANN REFRIGERATION.

One day at a business luncheon the production manager of a cosmetic firm found himself seated next to the managing editor of MODERN PACKAGING.

After the two introduced themselves, the production manager said to the editor:

"By the way, do you know of anything we could use in place of X——'s boxes for gift sets?"

The editor began turning over in her mind the possibilities—folding cartons, set-up boxes, plastic containers, metal boxes, fancy wood—. There didn't seem to be anything to suit the problem.

"But why," she said, "do you want to change your present packages?"

"It's like this," he said. "We can't think of anything else either. But the cost of packaging materials is going up and we don't want to raise the price of our gift set if we can help it. For years it has sold for a dollar and a half and women know it at that price. But there's very little profit today, when the box costs us between 25 and 30 cents. We've tried other boxes, but they don't give the quality appearance of X—'s."

The production man and the editor left the luncheon with the problem unsolved. This instance is typical of the economic conditions which every user of packaging materials faces today.

For five years, nearly every business has enjoyed volume and profits such as they had never dreamed of before. The problem has not been one of watching costs but of getting the goods to supply the demand.

Such conditions are due for a change. It's not a time to wait for things to get back to normal, because they are never normal. It's not a time for business jitters, as some forecasters would make you believe, because there are still too many unsatisfied wants. But it is time to be on guard.

Two conditions are probably inevitable. Prices will continue to rise as long as labor continues to get higher wages. A renewed fight for your share of the consumer dollar will begin at precisely the time there is plenty of competing merchandise on store shelves for consumer selection.

Both of these conditions affect packaging. They make you wonder if there is a less-expensive container that would take the place of what you are using, as it did our luncheon friend. Or they may start you on a complete overhauling of your package purchasing and production costs to see if there are any ways in which you can reduce these costs. Many large companies already report such intensive studies under way.

The changing conditions make you consider more carefully where your product is to be sold and whether the package presentation is right for those channels of distribution.

The greatest single force, of course, in bringing about current package changes is the self-service store. Today 75% of all food stores are self-service whereas only half that many were self-service eight years ago. M. M. Zimmerman, editor and publisher of *Super Market Merchandising*, says that the country is approaching the era of 100% self-service and "since self-

service generally means packaging of one kind or another, this means we are entering an unprecedented era of demand on the packaging industry."

In the self-service store the clerk is unimportant, almost non-existent, until the shopper reaches the cash register to pay for her purchases. She buys by impulse or "sight and touch." She is influenced to buy what she sees and can reach. The package, therefore, must stand on its own as a salesman.* That such salesmen can outsell the best trained clerk behind a counter is indicated by these figures. The average sale per customer in the neighborhood store is estimated to be 45 cents; in the neighborhood chain grocery, 65 cents; in the average supermarket, $1.57. And although only 2.8% of the country's retail outlets are classified as supermarkets, they account for more than 40% of the nation's 20-billion dollar volume today, according to statements recently made by Mr. Zimmerman.

That industry is aware of the need for revamping its packages for the self-service era is indicated by the significant changes of the past year. After 60 years the Quaker Oats man has changed his face. Instead of the full-length figure, there is now appearing on the packages a modernized head-and-shoulder picture of the smiling Quaker. Another old stand-by, the same since 1899, is the Uneeda Biscuit package, now appearing on store shelves for the first time with a picture of the cracker on both sides of the package because National Biscuit Co. "feels the customer should see what she is buying." A year or so ago Pillsbury Mills modernized its whole line of packaged flours for self-service selling. Armour & Co. put all its packages into a new family for better visibility and quicker identity. In this issue you will read about what National Sugar Refining Co.† has done to Jack Frost sugar packages to meet the demand for package salesmanship—the first major package change for this company since 1927.

Hundreds of other companies will be making news during the coming year with packages redesigned for self-service selling and are demanding designers who understand traffic in the self-service store, knowledge of store layout, shelving, gondolas, floor displays, etc.

As the food industry gradually approaches 100% self-service, new packaging techniques must be used to increase visibility, to facilitate handling and the flow of traffic. Gradually all perishables will become packaged—produce, meat, dairy products, baked goods. Much of this is already packaged.

The last year has seen tremendous progress in the pre-packaging of fresh produce. It is safe to say that every large food-store organization in the country is using or experimenting with packaged produce in some of its units, or is planning for it. The U. S. Dept. of Agriculture and dozens of state universities have turned their attention to the complex problems involved in this packaging development. Many large food stores are now on a 100% self-service basis.

Western Growers Assn., on the Pacific Coast, who ship between 80 and 90% of all the fruits and vegetables on the Coast, have organized a laboratory to develop a packaging process whereby a single shipper can send five to 10 cars of packaged produce a day. Pre-

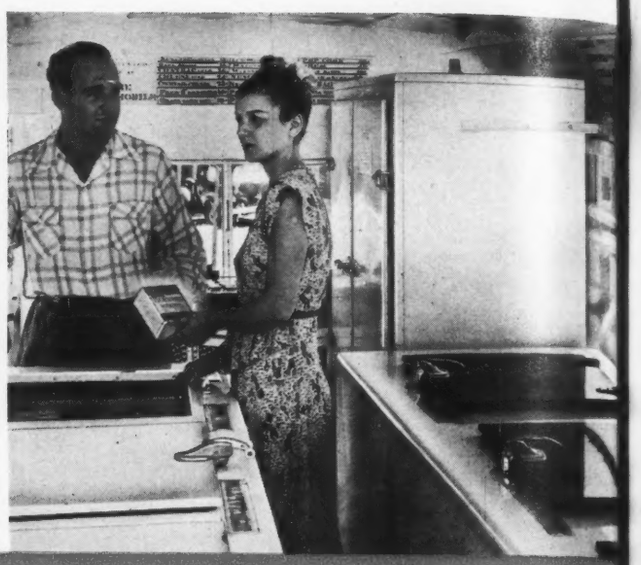
Will your package be ready to meet competitive conditions?

Will it stand up under changing methods of merchandising?

Junior puts a coin in a slot and gets a sandwich all packaged and labeled from the Automatic Canteen at an airport. Vending machines dispense some $500,000,000 worth of goods a year and in many cases need a package of special size and special construction. PHOTO, UNITED AIRLINES.

* See "Impulse Buying Resurveyed," page 126.
† See "Sugar Salesmen," page 108.

In Arlington, Va., a converted bus, called "Frostmobile," becomes a traveling self-service store for frozen vegetables, fish, ice cream, as well as butter, eggs and other refrigerated foods.



The housewife enters from the rear and passes through making her selections on the way. She pays for them at a cashier's stand as she leaves the bus at the front. PHOTOS, FOOD FREEZING.

packaged meats are also a development of the chain and self-service store. Prior to the chain-store era, meats, poultry and fish were sold almost exclusively through specialized markets for that purpose. Chain stores later added meat departments. As business grew it became increasingly difficult to provide skilled meat personnel to handle peak traffic loads. Prepackaging offered a solution to this traffic problem. Central packaging, by wholesaler or chain headquarters, is the ultimate goal of such packaging, but until certain technical problems are overcome such as proper refrigerating units, storing and handling, the operation will probably continue as it is being done now, in the store of sale. Here the meats can be cut, trimmed and packaged in off-peak hours, ready for the rush. Operations in individual large supermarkets during the past 10 years have shown increases of 25 to 40% in prepackaged meats. The public has accepted them from the start and this acceptance is a challenge to the meat industry to devise more efficient, large-scale packaging methods.

The self-service idea is also extending to other types of retail outlets such as hardware, drugs, liquors, household merchandise, soft lines, electric goods, automobile accessories and even farm supplies. In the realm of soft goods it means packaging for many items, particularly textiles and garments, which have never been packaged before. It is also a challenge to machinery manufacturers to devise new ways of packaging, such as equipment, for instance, that will load automatically a pair of baby pants in a carton or that will fold sheets mechanically.

In the field of farm equipment and automobile accessories it means package redesign and the uniting of many package families under one identity—so that they are associated with the trademark of the maker. International Harvester has accomplished such a packaging program during the last year. Fisk Tire and Rubber is aiming to package Fisk products in packages bearing the "Time-to-Retire" Fisk boy trademark and associating these packages with new signs atop Fisk dealer stores.

Another trend in the self-service supermarket idea is the combining of super-stores of various types under one roof—something like getting back to the crossroads general store on a gigantic scale—a place where the customers come in automobiles, similarly to the way they used to travel to the crossroads general store by horse and wagon. A store which will be 15 superstores under one roof is being planned as the Mar-Hill shopping center in Youngstown, Ohio. It will handle groceries, flowers, furniture, theater tickets, meats, produce—with even a drive-in bank payment branch.

This swing to self service also means new trends in display. There is little place for the old-fashioned point-of-sale display material in the modern self-service store. Most of the advertising is done by the package on the shelf, which the customer can see. Display manufacturers are working on permanent types of merchandisers or materials which appear above the shelves, in windows or on pennants above eye levels.

Along with all this new packaging something is happening to private brand packaging too. Stores which make a specialty of private brands will not give them up in favor of nationally advertised brands. They feel that in a private brand they have something which no other store can supply—an added merchandising advantage which will bring satisfied customers back

for the private brand they can get only in that store. However, there will be a simplification of private brand names. Kroger took the lead with the recent announcement that they had put 49 different Kroger brands under one Kroger name. One brand name is easier to advertise and also stands out in the consumer's mind as well as in the mind of sales forces.

Simplification of sizes and types of packages to save warehouse space is also receiving attention. During the past few years, with practically no new construction, the available space for warehousing has been a terrific problem to distributors. They are very appreciative of packages which save space, which are easy to identify by family design and which are structurally efficient for handling and storage.

The self-service stores are getting all the ballyhoo in today's merchandising set-ups, but other methods of distribution are confronting manufacturers today which may affect the package as much as self-service stores.

Before the war 4,000,000 vending machines were dispensing annually $500,000,000 worth of sweets, cigarettes, chewing gum, beverages and other items. Vending machines account for nearly 15% of the total cigarette sales. About 40% of Coca-Cola's bottled sales are made by 205,000 machines. Since 1935 Coca-Cola has invested more than $40,000,000 in 190,000 bottle dispensers and 15,000 cup-type vendors. Vending machines are coming back into prominence and in many cases mean a package of special size and construction to fit the machine. They sell thousands of items: golf balls, perfume whiffs, laundry, toilet seat covers, insurance policies and hot dogs. Suggested uses are for butter, milk, frozen foods in apartments and gasoline in automatic stations. In the works is a machine to sell fresh meat and fish. If your product is suitable for vending machine sale, then it should be planned with this in mind. One prominent maker of confections is planning to redesign the shape of its bars so that they will be adaptable to vending machines along with similar products already on the market. Most vending machines can be adapted or adjusted to handle many sizes of small packages but if you have a package suitable for such outlets, it is well to consider machine vending while planning packages.

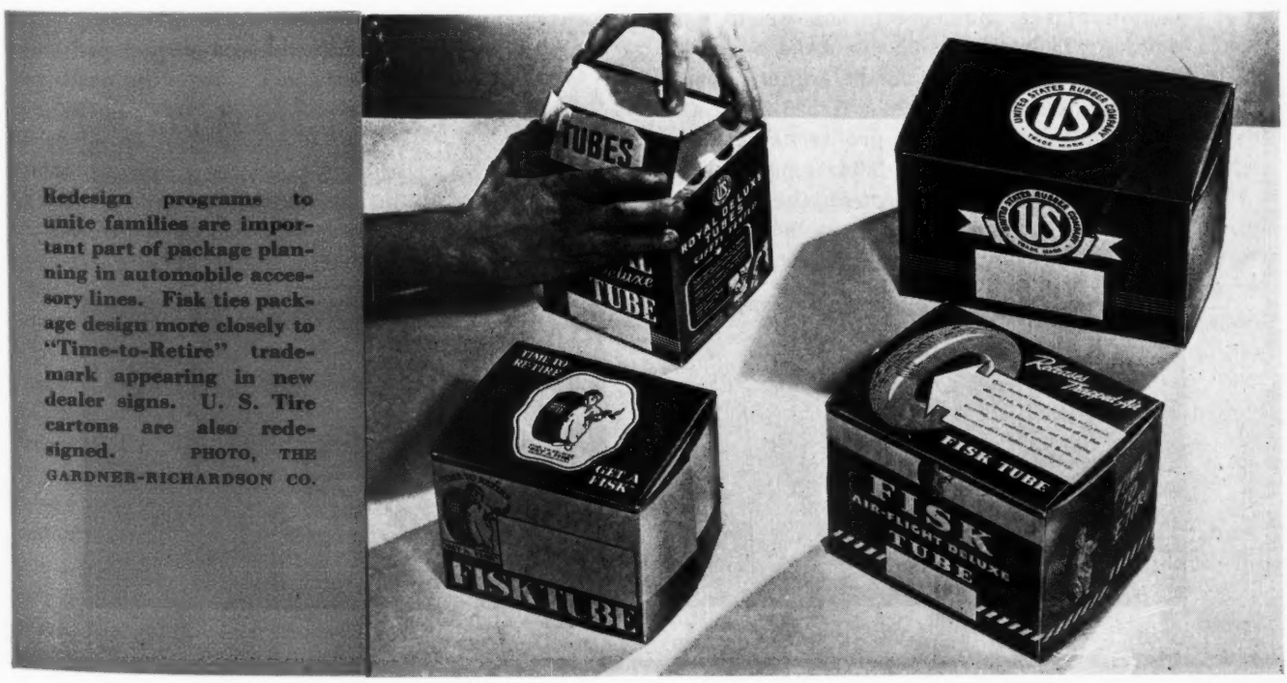
An example of volume that can be built up in this field is indicated by the experience of Revco, Inc., Deerfield, Mich., an ice cream manufacturer. This company's 22 machines averaged 21,540 five-cent cups of ice cream per machine annually, an average yield per machine of $1,077 for the period 1941–45. They are now converting to 10-cent machines.

Further changes in distribution have only been observed mildly so far because most manufacturers have not yet been able to focus beyond the current demands for production. Some of these trends will affect the package. You may be a manufacturer, for instance, who in the past has always turned down orders from a distributor for private brands packaged to his specification. In the future these demands may be such that you cannot ignore them or pass them off lightly.

Around the country are a number of large retailers who sell from house to house with fleets of trucks.

One such, Associated Food Distributor, Inc., operates a fleet of trailer stores in the San Francisco area and is now planning to enter the Los Angeles area. It reports that such operation eliminates six to 10 unnecessary handling steps in distributing foods. Each van with trailer carries up to 15 tons of merchandise and is stocked from neighborhood warehouses. Eight salesmen on each truck call on housewives and deliver three times a week house to house by hand truck.

In Arlington, Va., a converted bus equipped with



Redesign programs to unite families are important part of package planning in automobile accessory lines. Fisk ties package design more closely to "Time-to-Retire" trademark appearing in new dealer signs. U. S. Tire cartons are also redesigned. PHOTO, THE GARDNER-RICHARDSON CO.

freezers and refrigerators, called Frostmobile, serves as a travelling self-service store in which housewives may shop. They enter from the rear and pass through, selecting the merchandise on the way until they reach a pay station where they leave the bus at the front. The Frostmobile carries frozen fruits, vegetables, fish, ice cream, butter, eggs and other refrigerated foods.

Operations such as these compete with established dealers, but what should you do if such an operator comes to you with a big order to be packaged under his brand? There are also wholesalers banded together, placing orders for millions of dollars worth of merchandise under cooperative brands. Should you toss these orders aside because you have always manufactured under your own brand and are proud of it? Perhaps your product has been made in just one price range. Should you make second, even third, price lines in special packages for sale to mass distributors who must have special-priced merchandise? Should you manufacture and package for the mail-order houses? Should you do business with the buying offices?

These are questions manufacturers of packaged goods must consider today. Some may turn out to be basic trends in distribution; some may not, but today's packagers can't afford to ignore the possibilities for new outlets, no more than their predecessors could ignore the growth of the chains.

In the Middle West we know of a little company that makes specialty farinaceous products. It has been in business for probably 70 or 80 years. When the chains came along its management said, "Oh, no, we're not going to sell to the chains. We can't compete with the big boys in Minneapolis. Let them sell to the chains; we'll sell to the independents, our regular customers." It stuck to that policy. It didn't move into small consumer cartons—not until it had to. It survived the depression of the thirties by adding certain specialties to its line. It is still operating. It has had a couple of good years, because everybody has had a few good years, but it hasn't paid a dividend on its common stock in 20 years.

All of which adds up to a moral for this era of new trends. Follow them—don't buck the line or be afraid to violate policy. And if it means a change of package, change the package in accordance with the market in which you find you can sell the most goods.

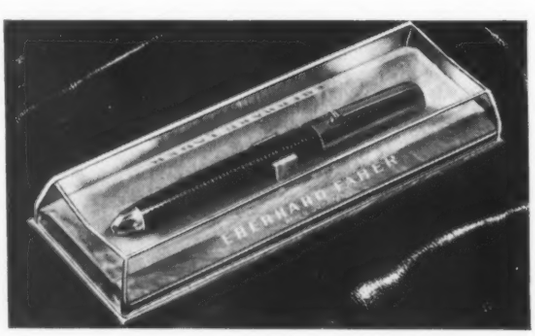
PEN ENCASED IN ACRYLIC

The transparent methyl methacrylate top of the all-plastic container for the new Eberhard Faber ball-point fountain pen is molded—not fabricated. Its intriguing concave shape takes full advantage of the ability of the acrylic material to do tricks with light and to catch all flattering highlights and shadows. The molded top has weight and rigidity which give to the package a quality "feel" quite different from the ordinary transparent container.

Molding also insures a precise fit with the base so that the cover is held firmly by friction alone and thereby protects the pen from damage by dust, grime and climatic conditions.

The base is molded of cellulose acetate butyrate in either a mottled pearl gray or a clear ivory color. The name "Eberhard Faber" is dramatically presented on two sides in heat-stamped gold lettering. The butyrate has sufficient strength and elasticity so that the pen can be snapped in and out of a simple clamp which is molded as an integral part of the base.

CREDITS: *Box molded by Arnold Brilhart, Ltd., Great Neck, N. Y., using Plexiglas (Rohm & Haas) and Lucite (du Pont) methyl methacrylate and Tennessee Eastman Corp. Tenite II cellulose acetate butyrate.*



1. Butler Bros.' use of good-better-best quality designation on hardline items is typified by Belmont, Testrite, Homecrest paint labels.

23,000 ITEMS

How Butler Bros., world's largest wholesaler, evolved quality branding and a coordinated packaging program

by HARRY C. ISAACS*

NO packaging program can have validity or solve basic problems unless an exhaustive evaluative study has first been made. Such a study must first consider the ultimate ends to be accomplished in line with the merchandise plans of the company. Once this has been done, the next step is to establish the immediate goal and the criteria for reaching that goal.

First and foremost, the position of the company in the distributive system and its merchandise plans must be put down on paper. The packaging and branding of merchandise takes many forms and encounters different problems inherent in and indigenous to the seller. The manufacturer who makes an item or a line of related items has one problem, while the retailer, chain store, mail order houses or department store has another. The problem of the wholesale distributor—the problem of Butler Bros., the world's largest distributor of general merchandise—is again a different one.

A packaging program in Butler Bros. must envisage not only the packaging of approximately 23,000 items—from paint to hairpins—but must also take into consideration certain problems basic in our merchandise distribution position. For example:

Butler Bros. distributes merchandise to over 40,000 customers.

We sell the majority of our merchandise to home-owned stores located in towns of under 10,000 population.

We distribute merchandise to stores who have inherently different methods of display—variety, hardware, dry goods stores.

Certain packaging is "wholesale" packaging and carries goods from Butler Bros. to the retailer.

While wholesale packaging must be provided, there is also the problem of "retail" packaging to provide for the package taken home from the retail store by the consumer.

Before any packaging can even be considered, these five points must be thoroughly assimilated.

In our company the packaging and brands department is in the merchandise development department, where all design, styling and color coordination is handled. The line of authority leads from the manager of the merchandise development department to the vice-president in charge of merchandise. Such a set-up provides for a thorough integration of all styling and designing from the item to the package.

The goal of the packaging department may be roughly broken down into two parts:

1. Establish family relationships of brand names on a basis consistent with good merchandising practice.
2. Establish family relationships of package design from logotype to color scheme.

* Merchandise Development Manager, Butler Bros., Chicago.

2. Textile items here illustrated show the use of tan trademarked paper with the company's "service, leadership" seal motif. Color of the end label indicates that item is quality grade.

3. Label colors of deep blue and white are appropriate to curtains and curtain accessories. This line has only one quality grade and uses single trade name of "Montclair" for all items.

Management has stated the following basic principles as the guideposts for effectuating the goal:

1. Packaging attractiveness and economy of production, with maximum item coordination, must be developed.
2. A workable packaging and branding procedure of permanent value to the business must be established.
3. All packaging materials involving the use of Butler Bros.' private brand names should be purchased and controlled by Butler Bros.
4. Brand structures must be established on the basis of quality and not price.
5. Right packaging is as important as right pricing and right value on any item.
6. Every business doing a creative merchandising job must incorporate packaging as an essential part of its effort.
7. Packaging is the ultimate in advertising—it is advertising carried home by the consumer. *It must be right.*
8. It is the packaging and brands department's function to develop correct and economical packaging. It is the buyer's responsibility to see that it is used by the manufacturer.
9. The cost of packaging must not make necessary the reduction of quantity, quality or profit.
10. The packaging department must exercise control over brand name quality application.

With this background, it is possible to look at the problems and see some of the solutions.

The first problem was, of course, to establish a brand structure that would cover adequately the thousands of items. The magnitude of this task may be appreciated when it is realized that there were almost 400 brand names in use in our company in 1939. This was, of course, too many to have any value for retailer or consumer recognition and too many to advertise effectively through any medium.

Under the new program the six merchandising divisions of the company have been analyzed and combed for grouping at the retail level. The final brand structure contains about 75 brand names. In arriving at a brand name the basic criteria were (1) the place an item was located in the store at the sales point and (2) current trade practice. No variations from these 75 names may be made, although the names may be used with sub-designations where necessary.

On the whole, a "Good, Better, Best" quality designation was used. For example, the names Balmar (good), Valor (better) and Hanway (best) have been selected for men's and boys' dress clothes (except suits), accessories, handkerchiefs, umbrellas, key cases, billfolds and pipe accessories.

On hard lines, on the same basis, the names Belmont, Testrite and Homecrest were used. These names are applied on the variety of hard line items from monkey wrenches and floor tacks to wallpaper and paints. Fig. 1 shows the three names, Belmont—good, Testrite—

4. Variety store "hard" line makes use of vivid orange and black labeling, since these are largely impulse items. Background design illustrates product uses.

better, Homecrest—best, on the Butler Bros. paint cans.

There are lines in which style and color are factors as important as quality in consumer buying habits. On such lines a single brand name has been used, with a quality "floor" below which the name may not be applied. Typical of this arrangement is the name Ruth Barry, which is used on women's handkerchiefs, belts, handbags, scarves, neckwear, robes, dresses, coats, suits, sportswear and gloves.

By either of these two methods a broad basis of consumer brand identification has been established. All lines and items have been examined and carefully analyzed so that there is now a ready reference chart which immediately tells a buyer what brand name is applicable to an item once its quality has been set.

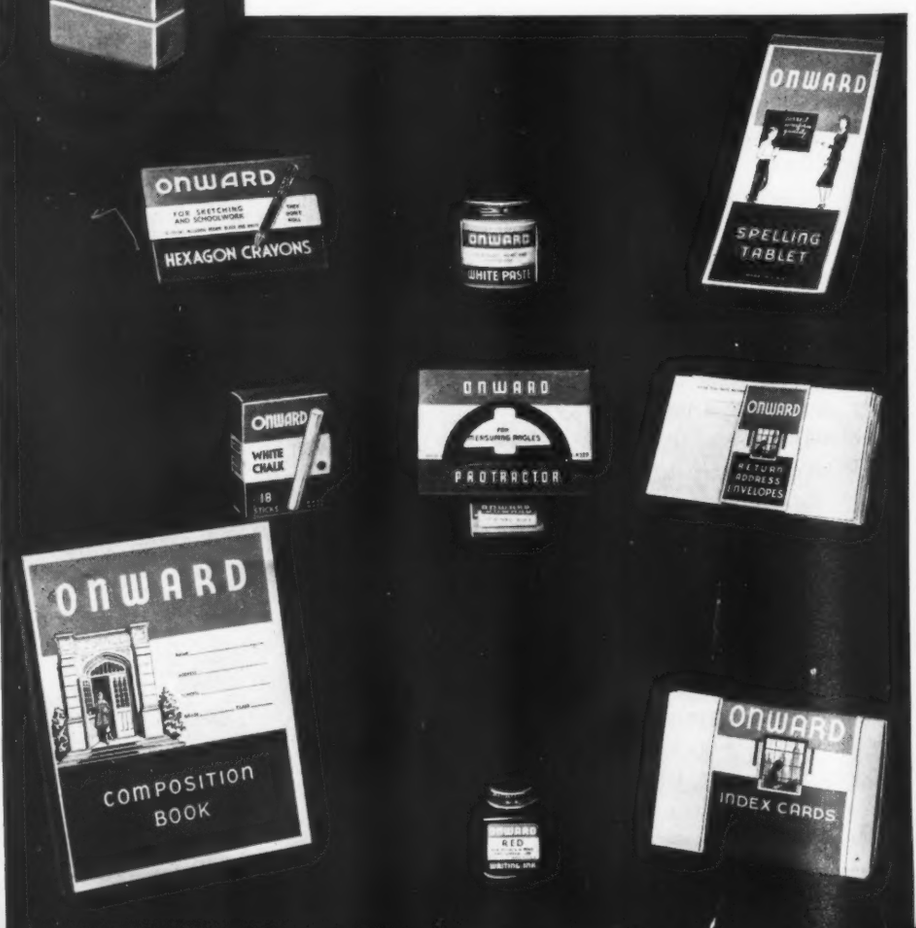
In setting up color and logotype application, a basic over-all policy was arrived at with regard to the majority of textile lines. Textile items are, for the most part, sold in dry goods and junior department stores. There is less impulse buying involved here than on variety lines. A tan trademarked paper was developed to serve as the background color for textile lines. The paper bears the imprint of Butler Bros.' service and leadership seal. Fig. 2 shows the use of this paper.

On boxes where the trademarked paper is used an end

5. Typical of housewares items are Titan steel wool and cleanser pads shown above. These cartons are boldly designed with a deep blue background, lemon yellow top and white printing for brand name.

6. Wide variety of sizes and shapes in notions line is covered by this adaptable design and logotype. Colors are deep blue, medium blue and white. Lettering is clear and easily readable. Crown symbol ties up with the "Majesty" name.

7. Cleanliness is suggested by Snow Bird line of waxes and polishes. Note use of a can lid on this package for unusual identifying touch.



8. Red, white and blue color scheme on Onward line of school supplies has strong appeal and unmistakable recognition value for children.

label showing the trademark, a primary color, the wreath about the brand name (used on all textile lines) and a box giving stock information regarding the contents is used. The primary colors vary with the lines. For fashions it is a deep blue; for men's and boys' wear a dark green; for blankets a soft violet. Each of the colors has been chosen with the product use and consumer color preferences in mind. In order to insure color control all of the packaging colors are set up with standard ink numbers and, in most cases, with Ostwald designations. All orders for packaging carry these color control identification numbers.

Even within the textile lines, however, there are, as indicated above, some variations to this general color scheme. A good example is the packaging of curtains and curtain accessories. Here again, as on Ruth Barry, there is no good, better, best breakdown but all items in the group are packaged under the name Montclair. A clear, sharp lettering of the Montclair was used within the wreath for textiles. A deep blue was used for the primary color. The tan for textiles was dropped because its suggestion was not appropriate with the items, and white was used instead. Fig. 3 shows examples of some of the Montclair packaging.

The development of logotypes and color schemes for lines sold in variety stores presents an entirely different problem. In variety stores impulse purchases account for approximately 51% of the store volume. Here, then, we have lines calling for brightness of color and lettering of contents outstandingly legible. Each group of related items in a variety store must be as a flower group in a well-planned and well-cared for flower garden.

9. Retail packages for men's and boys' items shown above are adapted from those of the wholesale line. Same coloring and design are used. Green for men's wear, the wreath and tan paper for textiles, insure a complete identity between the wholesale and retail packaging for these two lines by Butler Bros.

Several examples of the packaging of variety store lines may illustrate the possibilities here.

Fig. 4 shows a typical line of variety store hard line merchandise packaged under the Belmont (good) name. The brand name and the contents are imprinted on the package in black. The "punch" color used is orange. As can be seen in the illustration, wherever possible the contents or some typical uses for the contents are printed in reverse on the orange. This has been one of our most effective variety store lines.

All cleaning aids, enamelware and similar items have the name Titan (good). The dark background on the packages in Fig. 5 is a very deep blue. The light top is a lemon yellow and the brand is printed in blue on white.

One of the most difficult lines we have encountered was the notions line. One of the big volume lines in a variety store, the notions counters have a great deal of space allotted to them. Shapes, sizes and contours are as varied as in any other ten lines put together. The problem was to find a logotype, a color scheme and a design that would fit all the shapes and sizes. After much travail, the package shown in Fig. 6. was accepted as fulfilling all the necessary requirements. The design is adaptable to all the shapes without distortion. The lettering is clear and easily read. The color is a medium blue on white, with the lettering and the outer shadow edge of the center panel in deep blue.

An interesting problem was presented in the packaging of our Snow Bird (good) line of waxes and polishes. The resolution of the problem is shown in Fig. 7. The stylized figure of the snow bird carries a good deal of consumer recognition. The contents are printed in white against a black panel on a white can. The brand name is printed in a light greenish-blue. The can as a whole presents to the consumer the appearance of neatness and cleanliness she can expect from the contents.

The Onward (Fig. 8) name has been used for many years on our complete line of school supplies. Printed in red, white and blue, it has appeal for school children.

As these variety lines were developed, there were always two questions uppermost in our minds:

1. In the normal layout of a store, alongside what items will these items be placed? (This meant being sure that we were not putting packages with clashing colors near each other, killing the impulse appeal of both lines.)
2. How will the items be (*Continued on page 164*)

SUGAR SALESMEN

New packages recognize importance of housewife in selecting sugars in self-service market. Trade name is changed from static Gothic to flowing italic. Red unsymmetrical patches tell at a glance the grade of sugar in each package. Three background blues distinguish white sugars.

Old package design lacked movement for shelf display. No red patches or background color variations distinguished one grade of sugar from another. Side panels did not play up Jack Frost.

Several hundred sugar brokers, distributors and the press went to an engraved-invitation affair at New York's Hotel Pierre the other day to see the complete line of redesigned packages for Jack Frost sugars.

The packages were launched by National Sugar Refining Co. with considerable fanfare and represent the first major change in Jack Frost containers since 1927.

A few days later five-column newspaper ads in metropolitan dailies told housewives to "Look, look! New and better packages for the whole family of Jack Frost sugars."

Soon a big Jack Frost neon sign, featuring the new package, will appear on the East River atop the company's Long Island City plant. This will take the place of the famous Jack Frost sign that used to shine across the Hudson.

To distinguish one company's sugar from another takes a package. The sugar business, like salt and flour, is a good example of what economists call *pure competition.* There are some differences in quality, of course, but by and large the sugar of one good refinery is essentially the same as another. In normal times there are two ways, under pure competition, to move your inventory. One is price, the other advertising—and the louder the advertising the better the sales.

New packages for National Sugar families are designed to fight for brand loyalty in a field of pure competition

Advertising pre-supposes a recognizable package that ties up with promotions and one that the housewife will remember and ask for when she goes to shop in today's supermarkets.

Because practically all sugar is sold through brokers and is not pushed directly by company sales representatives, the package also plays a greater part in consumer acceptance than it does for many other products where the distribution set-up is more closely linked to company sales forces. The small margin of profit also puts a heavier sales burden on the package.

In anticipation of the day—perhaps not too far distant—when women will be asking for sugar by brand again, National Sugar is counting strongly on its improved packages to develop greater customer brand loyalty. This program covers not only the Jack Frost packages, but a similar modernization program for the packages of the company's affiliate brands of sugar—Quaker and Arbuckle—which have wide acceptance throughout Pennsylvania, New Jersey, West Virginia and Ohio.

Distribution of the new Jack Frost packages began simultaneously with the consumer and trade advertising during the middle of December. The new Quaker and Arbuckle packages are reaching their respective market areas this month.

The entire program is one that recognizes the importance of the housewife in selecting sugars in the self-service market. A woman designer was commissioned as design consultant, because National Sugar believed the woman's viewpoint was a first requisite in the planning of packages to be bought and used by women.

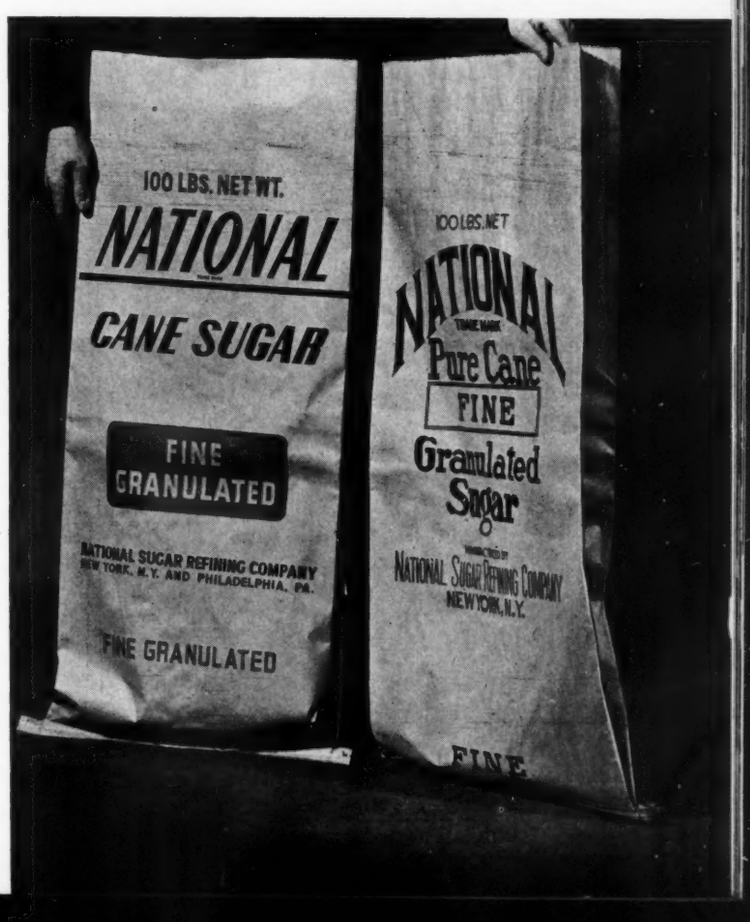
The primary change in appearance was a complete restyling of the lettering of the trade name "Jack Frost" from a static Gothic to a flowing italic, which the designer says gives the packages a feeling of "marching rhythm" in shelf display.

Other features are perhaps best explained by the selling points in the company's advertising, each calling attention to a convenience feature for the housewife or store operator.

"Notice the bright red panel," the copy reads. On each package is an unsymmetrical red patch, which designates the kind of sugar in the package—granulated, Verifine, confectioner's Super X, tablets, dark brown or light brown. This use of the red patch intro-

A real boy dressed as the Jack Frost trademark compares new package with an old one in the hands of paper cut-out figure. Shelf arrangement shows effectiveness of new packages in display.

The company's new 100-lb. bag (left) will continue to bear the trade name, "National," but note how the lettering has been changed to conform to the new Jack Frost package lettering.



duces a second color to the new packages. The old ones were printed only in one color but the company believes the slight added expense of two-color printing is well worth the cost in differentiating the various types of sugars on the red patches.

"Tells at a glance what kind of sugar's in the package" is the second point in the ads. Here attention is called to the oblique letters appearing under the words "Jack Frost" which tell at a glance that the packages contain cane sugar. This point is driven home a second time by repetition on the placard held up by the trademark figure of the Jack Frost boy who is retained on all the new packages. On all packages except that for the confectioner's Super X sugar, his placard reads "100% Cane Sugar." On the Super X it says merely Cane Sugar, with an explanation below the red patch that the package "contains 97% pure cane sugar and 3% corn starch."

A further aid is provided in distinguishing the three easily confused grades of white sugar by the use of three differently colored backgrounds. The granulated, which comes in one-, two- and five-pound cartons has a background color of deep blue. The Verifine sugar is distinguished from the granulated by a background color of greenish blue while the confectioner's Super X is distinguished from the others by a background color of gray-blue. Two shades of brown are used to distinguish the light and the dark brown sugars. The grade name, of course, is also always set apart by the printing on the red patch.

"Can't miss it, it's on the front, sides, top and bottom," continues the advertising copy, calling attention to the repetition of the basic design and product designations on all sides of the package except the back panel, which is devoted to recipes, easy to clip for reference. Also featured on the back panel is useful information about the various sugar grades and their specific uses.

"So convenient and so easy to handle" is the copy theme that stresses the dispensing device for all of the sugars except the granulated, particularly for the specialties which the housewife likes to open and re-close for storage in the home. This device, called Open-N-Shut

A new dispensing device has been adopted for all the packages containing sugar specialties so that the housewife can open and reclose them. Photo shows the construction of this patented method of perforating and die-cutting the two top flaps.

Tablet cartons—all one-piece construction — are equipped with perforated inner flap, a portion of which is removed when the package is opened. When the carton is reclosed, contents are completely protected from dust.

The Pennsylvania Sugar Co., which is an affiliate of National Sugar, has also redesigned its Quaker line of sugars. The trademark figure has been modernized and lettering revamped for better self-service display. A diagonal stripe in contrasting color is used to distinguish the various grades of sugar.

top, is achieved by a patented method of perforating and die-cutting the two top flaps of the carton and a special gluing.

The basic design has been applied to containers of all sizes in which Jack Frost sugar is packaged—cartons, paper and cotton bags, balers and corrugated containers. It will also be used for stationery, truck insignia and advertising displays. The 100-lb. bags will continue to bear the trade name "National" but the lettering has been changed to conform to the new Jack Frost lettering style.

The basic design has also been adapted to the Jack Frost tablet packages in one- and two-pound sizes. Here another new convenience feature has been added by the introduction in the one-piece construction of a perforated inner flap, a portion of which the housewife removes when she opens the package. The opening is completely covered when she recloses the top flap, so that contents are protected from dust at all times. This feature was the only one that required new package production line equipment—a special spot-gluing unit adjacent to the cartoning machine.

All of the cartons are made more resistant to soiling by the use of lacquer inks on a white stock. No liners are used in the packages for the granulated sugar but glassine liners give added protection from sifting and excessive moisture to the packages for the sugar specialties.

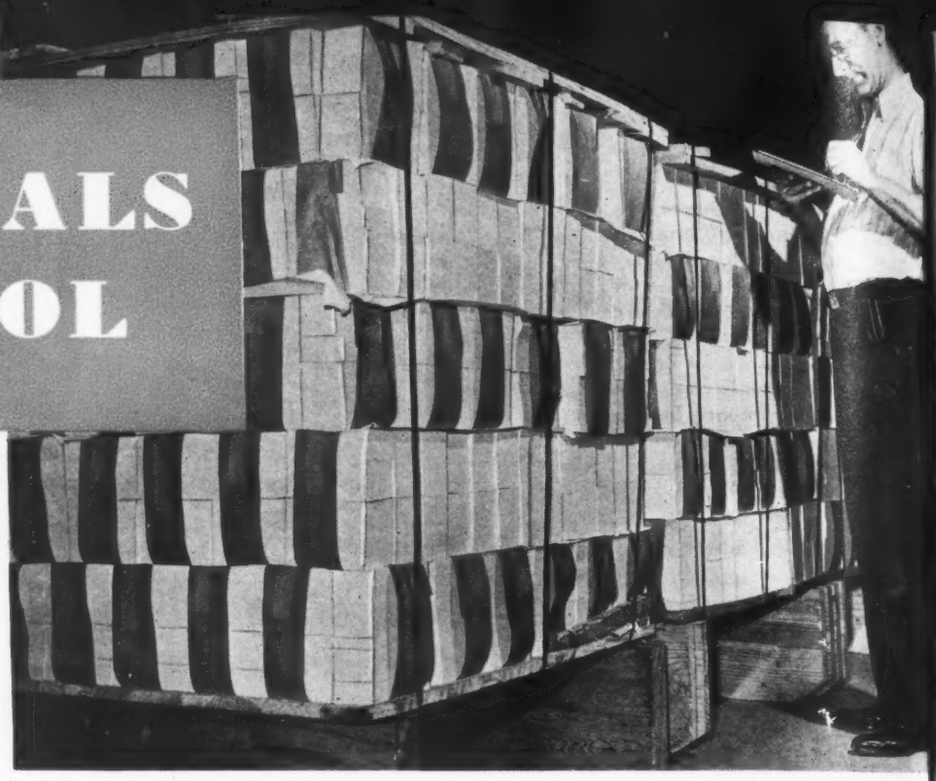
Similar programs of package redesign have been undertaken for the complete lines of National Sugar Refining Co.'s Quaker and Arbuckle sugars. In the case of the Quaker packages the figure of the Quaker girl trademark is modernized and lettering revamped to give it significance on the self-service shelf. A system for distinguishing the various grades of white sugars by the use of a diagonal stripe in contrasting color is employed. The new convenient dispensing features are also incorporated in the cartons for all but the granulated sugar and the same lacquer inks are used to give a brighter appearance as well as a better protective surface to the packages.

Changes are less pronounced on the Arbuckle package but the arrangement of the design was modified and lettering improved to strengthen the packages for shelf display. The basic color scheme for all the Arbuckle packages has been retained, but the overall program to distinguish the various sugar grades has been adapted to this line in the same manner as for the company's Jack Frost and Quaker lines. The improved carton convenience features are also incorporated in this line which has well-established acceptance in certain geographic areas.

All colors for all three lines have been selected so that, when necessary, any combinations of the cartons can be printed at the same time, depending upon production demands.

CREDITS: *Design consultant, Lane Marohn, New York. Experimental work on cartons, The Robert Gair Co., New York. Bags, St. Regis Paper Co., New York.*

MATERIALS CONTROL



To minimize handling, sheet paper packaging supplies should be received on wire-bound skids. Air-conditioned rooms for storage are best.

High-speed production calls for efficient methods of storage, handling and specification testing of packaging materials

by E. H. BALKEMA and FRED J. BURK*

The problem of storage and handling of packaging materials is becoming a most difficult one. New high-speed equipment, which sometimes is as sensitive as a blushing young girl, has forced us to review our present methods and improve them if we are to secure all the benefits.

Many of the present systems have grown like Topsy and, therefore, are as outmoded as a Model T Ford. To many of us who are in close contact with these outmoded systems it is impossible to see at a glance just what is wrong. A long-range view and detailed study is the only fair way to obtain the desired results.

It is impossible for any one person to set up a system which will have general application. By the very nature of the complicated and expensive items handled, the system must be tailor-made to fit the exacting requirements placed upon it by the plant in which it is used. Stock handling is the servant which feeds the production equipment.

The designer of the package and the purchasing people have the original responsibility for specifying the proper packaging materials so as to place the individual product in the hands of the consumer in the most favorable and acceptable manner.

The packaging people—through the medium of purchase specifications, drawn up for each item of packaging—assure the management that the desires of the sales, research and development, purchasing and production departments will be carefully weighed in specifying the most practical material. It is the

Laboratory testing agains

Compression test of empty corrugated shipping container. Five cases out of each shipment, after first being conditioned to standard humidity, are tested in this manner. All cases tested must meet specification requirements.

* Colgate-Palmolive-Peet Co., Jersey City, N. J.

function of the purchasing department to place its orders with reliable suppliers who can be counted upon to follow the specifications to the letter. The package engineer is more or less a diplomat who seeks by means of compromise the fulfillment of each department's desires. It is a rare instance when the desires, as well as the needs, of all departments are fulfilled. This is obvious for many reasons: the material the sales department or research department desires may not be available; it may be too expensive; it may not run on the production line.

It is also necessary to incorporate into the purchase specifications packing instructions for the material specified. These instructions should not be hastily written; if so, only the supplier's needs may be satisfied.

Packing instructions are most important, as maximum utilization of material can be realized only when a thorough and intelligent investigation of *both* the suppliers and your own individual production requirements are analyzed and embodied as a major request in the purchase specification.

Packing and coding

All packaging materials should be received in a form (in cases, drums, bundle packs, etc.) that satisfies, in a practical manner, the requirements affecting:

1. Method of use in the plant.
2. Quantity desired to be handled. (This establishes size, shape and weight of packed containers.)
3. Protection in shipping from suppliers.
4. Protection in intra-plant handling and storing.
5. Proper identification.

In the average plant a variety of packaging materials is ordinarily carried in stock. The first step in classifying and coding these materials is to standardize them. The indirect advantage of classification in encouraging standardization is frequently as great an advantage in reducing costs and increasing general plant efficiency as are the more direct advantages in facilitating storage and issuance.

Materials are classified according to their nature or to the use to which they are put, or both. A mnemonic system is required for classifying and symbolizing the variety of packaging materials used in production. Designation of symbol letters and numbers, to items, makes them easily recognizable in receiving, storing and production, and is immeasurably valuable to the accounting, planning and purchasing departments.

Each main group in this system can be subdivided as often as necessary; for example:

I. Main Groups	II. Subdivisions
P—Perfume items	1—Cartons
T—Toilet soap items	2—Wrappers
C—Cream items	3—Bottles
S—Shampoo items	4—Metal cans
	5—Cases
	6—Caps

A typical example of a code imprint on a shipping case would be: "5P 104" (showing that it is case 104, used in packaging a perfume item)

With packages undergoing constant changes in size, color, text, etc., any change should be recognizable in the coding. This can be done by dashing up the number following the letter, so that the symbol "5P 104-1" would clearly indicate a change. This aids in planning so as to exhaust old stock before the changed package is used in production.

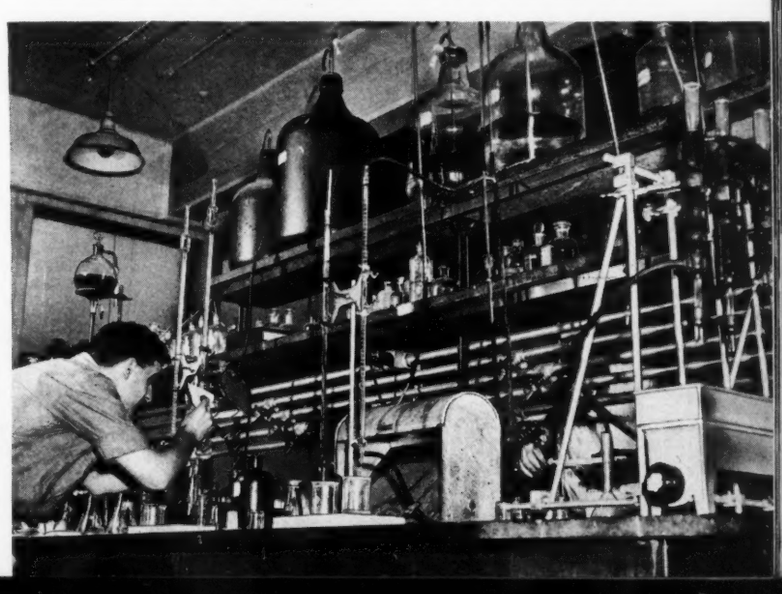
Stock handling

Stock handling should be held to a minimum. Multiple handling increases spoilage and lowers pro-

specifications is one assurance of trouble-free materials

Collapsible tubes being tested under simulated use conditions. Sample tubes are immersed in soapy solution to find out what might happen to inks and enamels. Fadeometer and crush tests are also part of specifications.

Completely equipped chemical laboratory is an important part of packaging materials control in any large plant. Here an attendant in the laboratory of a toiletries firm is performing an iron-content test on stiffener stock.



ductivity of production equipment. Wherever practicable, materials should be stored near the point of usage so as to save time and handling. The ideal arrangement would be to synchronize deliveries with production requirements. For obvious reasons this ideal cannot often be attained, but it can be approached through efficient purchasing.

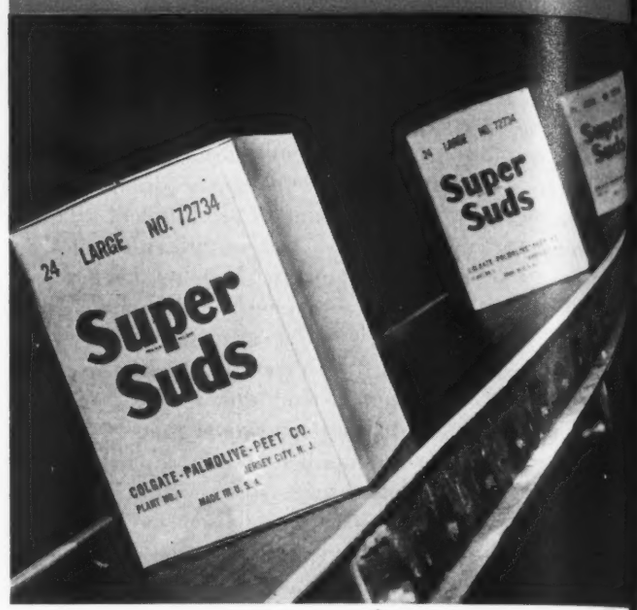
While there is no one pre-determined best system for the stock handling of packaging materials, there are certain basic fundamentals which should be observed. These are usually quite simple and will pay substantial dividends in increased production and decreased costs.

A materials control system should be set up to check each item received. In this way, the following benefits are derived:

1. Prevents loss of incoming materials.
2. Eliminates waste.
3. Prevents overbuying.
4. Prevents production delays.
5. Keeps intact a perpetual inventory.
6. Aids in accounting for materials.

Storage conditions

Many packaging items such as plain paper, labels, wrappers, cartons, folding boxes, shipping containers, etc., are ruined by poor storage conditions. A hot dry room or a wet cold cellar is sure to result in a complaint that the material is not fit for use. Such losses in these days of shortage are of course irreplaceable.



Proper conveyor equipment does much to insure safety of product after packaging. Here filled cartons move from the case sealer to storage, carefully spaced on a smooth rubber conveyor belt which minimizes risk of damage.

The coding "5P 104" identifies these shipping containers. The "5" indicates corrugated; "P" shows they are for a perfume item; "104" identifies the product specifically.

Paper and paperboard at the time of printing or conversion are usually in a fair or good condition, although today much "green" paper is used. The printers or converters know the value of relative humidity and temperature in warehousing and caring for this important raw packaging material.

To demonstrate the effect of moisture on paper, place a square piece of paper in water and then diagonally fold while still wet and observe the increase in size of that edge which is cut across the grain of the paper. The length of the edge running with the grain of the paper is not noticeably increased. This same principle also applies to many other types of packaging materials.

In printing such items as labels, wrappers, etc., one side of the paper stock is usually covered with ink and sometimes varnished. This seals off one side of the sheet but on the other side it is left open to absorb or give off moisture due to the storage conditions encountered. Even when tightly banded or packed under pressure, the natural result is curled sheets, which are most difficult to handle on high-speed equipment and objectionable even when applied by hand. Too-dry storage conditions will cause a curl away from the printed side, while excessive moisture will cause a curl to the printed side.

Many times mold is also encountered on certain packaging items which contain food for mold, especially when the storage conditions are favorable to the growth of mold. Strange as it may seem, most packaging materials are inoculated with mold spores as soon as

Finished goods here awaiting shipment are stored in an air-conditioned room at 50% R. H. and 70 deg. F. Because this is a dry, 4th-floor room, boxes can be piled directly on floor. With care in stacking, they can be piled four or five high.

Solid fibre drums filled with industrial soap are handled and stored on skids. This minimizes chance of damage and saves time. It also enables drums to be stacked four or five high as space permits.

the base stock is exposed to the air. Many have had good success in the control of mold growth during storage and use by the elimination of food for mold in the packaging materials themselves.

Folding boxes, cartons and similar packaging items when stored under unfavorable conditions develop still another breed of trouble. Have you ever seen an asphalt- or wax-laminated carton that had been stored next to a hot radiator and noted the amount of laminating material that bleeds through to the outside surfaces?

Dried-out packaging materials are also very difficult to use, as they have lost some of their strength characteristics and workability. Not infrequently, cartons or folding boxes will split at the score lines and present an unsightly appearance. Too much moisture is equally bad, as the packaging materials, among other faults, have a tendency to bulge and are difficult to handle in the packaging operations.

Basically, many packaging materials will stretch or shrink, depending upon the amount of moisture they contain. This is a main source of trouble. How this affects an individual packaging item depends upon the materials used in its manufacture and the methods used in the application of these materials in producing the finished item.

The basic principles

In general, the principles of storage and handling of packaging materials are quite simple; it is the application of these principles that is difficult. The following few simple rules will reduce to a minimum, if not entirely eliminate, stock storage and handling problems for packaging materials and result in increased production efficiency:

1. The system as set forth herein should be tailor-made for the plant in which it is used, and should be based upon the principle that its main purpose is to feed the production equipment in an orderly manner so as to permit the maximum efficiency.
2. Each delivery of packaging materials should be thoroughly checked against specifications to determine acceptability for use, even to the point of making a small production run.
3. Stock handling should be held to a minimum by proper planning of stock storage space.
4. The relative humidity should be maintained as closely as possible to 50% and the temperature should approximate 70 deg. F. for the major portion of all packaging materials. A few packaging materials may require special treatment.
5. All cases, bundles or containers should be plainly marked with their contents and suppliers' identification, and should be date-marked by the receiving department at time of delivery.
6. Care should be exercised in storing the packaging supplies so as not to damage them.
7. Packaging supplies should always be used in the order in which they are received.
8. Overstocking should be avoided.
9. Obsolete stock should be gotten rid of.

The availability of packaging materials ready to run at the proper time is more important at this time than money. Treat your materials accordingly.

MP DESIGN

POLYSTYRENE CANDY BOX

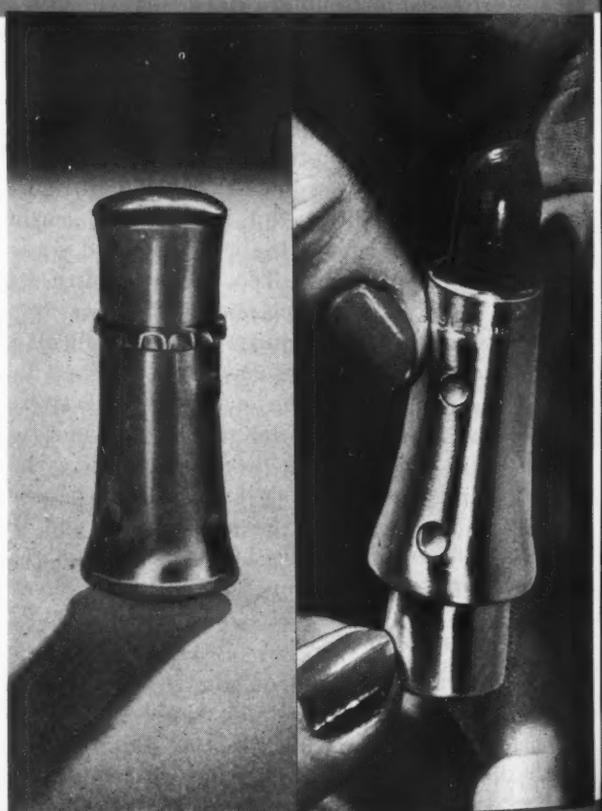
Beauty and utility are the twin keynotes of this attractive gift box employed by Mrs. Steven's Candy Shops, Chicago, for a generous assortment of chocolates. Made of plastic, the container may be re-used in the home for holding hosiery, gloves, handkerchiefs, costume jewelry or as a general utility box. Its classic lines make it a decorative addition to the dressing table. It is made in colors and also black and white. The box is injection molded of polystyrene in two pieces, tray and cover. The tray has a simple fluted design along the top edge. The snug fitting cover has smooth, rounded corners. Since there is no design whatsoever on the box, its value for later home use is enhanced. The addition of a wide satin ribbon tied into an extravagant bow and a gay flower boutonniere on the top give this box of candy an added festive note as a gift item.

Credit: *Box, Plastics Div., General American Transportation Corp., Chicago.*

LOCKABLE LIPSTICK

New feature of the Helena Rubinstein "Silver Turret" lipstick is its swivel lock, a patented device which is designed to prevent the top of the case from falling off and getting lost. The lock also is said to insure non-breakage and non-crushing of the stick. Simple in construction, the device works easily and smoothly. The removable cap pulls off in the regular manner and then screws into a hidden cylinder at the base of the case. This locks the top into the base and, with the cap in position, the lipstick is ready to be adjusted for use. The device enables the user to apply the lipstick with one hand, leaving the other free to hold a mirror or lipstick brush. The name "Silver Turret" was selected because of the lipstick's sterling silver case and its distinctive miniature turret shape. A decorative effect is achieved with several dots of gold metal coating.

Credit: *Case, Crest Silver Mfg. Co., Inc., Matawan, N. J.*



HISTORIES

BOTTLES DESIGNED TO LOOK LIKE MEN

Lenel's Gentrie toiletries present a new approach to package design for men's lines. Theme of the entire line is a man's dress and figure. The private mold glass bottles with phenolic caps shown here exemplify the idea. Upper portion is broad; the bottle then tapers to indicate waistline and hips. The bottle mold design simulates a scarf draped around the neck and down the front of the bottle. Below this is a gold embossed foil label. The molded phenolic shave bowl carries out the same design in its shape and lid decoration. Items are packaged as sets and individually in set-up paperboard boxes with green and white marble designed paper covering and gold foil labels. Soap is placed to stand easel fashion.

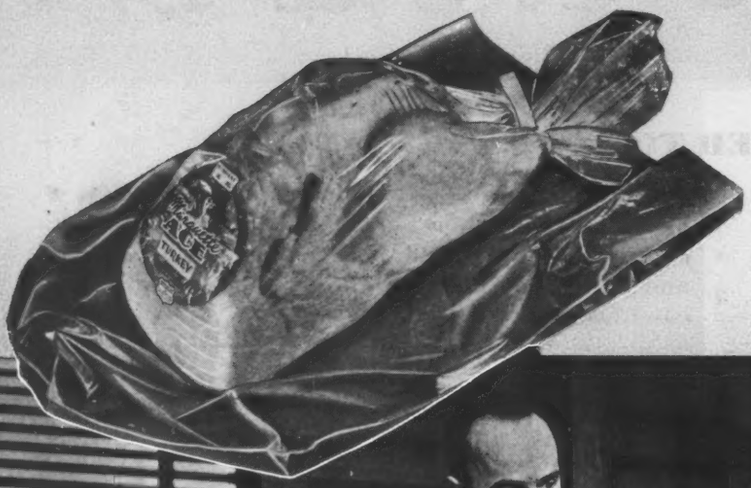
Credits: *Design, Ben Lewis, New York. Bottles, Kimble Glass Co., Vineland, N. J. Boxes for sets, Linden Boxcraft Co., Brooklyn, N. Y. Individual boxes, Fleet Patent Box Co., New York. Box paper, Hughes & Hoffman, New York. Labels, Fraser Label Co., Chicago. Phenolic caps and shave bowls, Formold Plastics Inc., Chicago.*

MODELS TRAINS IN BOXES

In the field of model railroad equipment, Rail Chief Products Co. claims to be first to launch a related theme in packaging. Their family of 18 boldly colored boxes stresses its identity to a firm known as a producer of quality model items. Product identity is achieved by featuring the name "Rail Chief" in large white letters on a square of black, which is set off by the red background of the box wrap. The trademark—a rail and an Indian chief's head— is printed on white. Each box top pictures the product contained and carries the name of the item in white script. The brand name, the trademark and the name of the product appear on both ends. Front and back skirts give information about other company products. A die-cut platform is used for holding animals, track layer, etc., in place.

Credits: *Designer, Frank Higgins. Boxes, City Wide Carton Co., Inc., New York. Photo offset and lacquering, Laurel Process Co., New York.*

POLYETHYLENE



Colorfully printed polyethylene bag is used by Food Processors, Inc., for frozen whole turkeys. The excellent low-temperature characteristics recommend the film for such purposes as this.

M. H. Fox (left) and G. C. Hallawell, of Marwyn Dairy Products Corp., inspect a polyethylene bag inside solid fibre carton package for 60 lbs. of frozen fresh cream.

PHOTOS, TRAVER CORP.

Chemical inertness makes printed polyethylene film a good package for plastic (vinyl chloride) tablecloth (lower left). Also shown: small utility bag used by American Airlines and another turkey bag—reusable as refrigerator storage bag.

PACKAGES IN USE

A report on first merchandising experience with promising new film in a variety of applications; how the technical problems are met

The chemical and physical properties of polyethylene, a new plastic which first made its appearance in an English laboratory just prior to the war, were outlined in the September, 1946, issue of MODERN PACKAGING (page 130). This article pointed out that certain unique characteristics of this interesting film material—its pronounced chemical inertness, light weight, moistureproofness and flexibility at low temperatures—admirably qualified it for a wide range of packaging applications.

Among the converting firms which have played a leading part in transforming polyethylene sheeting into actual packages and working out problems relative to their proper use is the Traver Corp., Chicago. This company fabricates a variety of bags, both printed and unprinted, from Visqueen (formerly Pearlon) polyethylene film. The latter is extruded by the Visking Corp., Chicago, of Du Pont or Bakelite resins.

A number of these polyethylene packages are now in commercial use or are being studied by food growers and packers, dairies, mail order firms and other organizations. Certain practical problems encountered in connection with this type of film, such as the printing and heat-sealing of the packages, are being worked out.

Some of the packages now being produced are closed by a simple fold, while others, due to the nature of the product, call for a heat-seal. Although it is possible to seal the polyethylene bags on modified standard heat-sealing equipment, experimental work is being continued on this problem in order to improve the efficiency of the operation. The manufacturer of one type of rotary heat-sealing equipment reports that about 85 perfect seals may now be obtained per 100 bags run through the machine. Continued research is said to promise an eventual 98 or 99% efficiency in heat-sealing the packages with this equipment.

Polyethylene itself is readily heat-sealed; the primary problem is to keep the plastic from adhering to the jaws of the sealing equipment. As pointed out in the previous article, this may be accomplished by coating the working surfaces of the machine with Teflon tetrafluorethylene resin, a new Du Pont plastic which is unharmed by temperatures up to 575 deg. F. and withstands every known solvent.

Another material which may be used to prevent the polyethylene film from sticking to the heating elements is DC mold release fluid, produced by Dow Corning Corp. This is a silicon fluid used in a wide range of plastic applications as a parting agent. It is customarily employed in a concentration of 2 to 5%, the recommended solvents including methyl ethyl ketone, benzene, toluene xylene, chloroform, carbon tetrachloride, amyl alcohol, ethyl acetate or any high-flash naphtha. The solution may be sprayed, brushed or

Tasteless and odorless, the new film may be used in direct contact with prepared foods—as in this printed envelope for freshly cooked shrimp.

Because it is a "breathing" material, polyethylene film in bag form has proved to be ideal for packaging freshly cut flowers and corsages.

Frozen food locker bags, household utility bags and tubing are big initial users of polyethylene film. All the Traver assortments illustrated are packaged in cellophane envelopes or wraps, with printed or insert labels.

wiped on the heat-sealing rollers or on flat bar-seal equipment, the protective coating being renewed periodically as operating conditions indicate.

On small-scale packaging operations, such as for food items to be packed in bags for the home or locker plant, the material may be successfully sealed with a hand type of sealer. One such unit features heating surfaces enclosed in a heat-resistant plastic case, and effects a liquid-tight seal when the heated surfaces are brought together on the edge of the bag. This model, which is plugged into a 115-volt a.-c. outlet, incorporates a thermostatic control which cuts off the current at the desired sealing temperature. It measures $2^1/_2$ by 6 in. in size and weighs only 14 oz.

The polyethylene material may be printed by special processes, using solid colors, but due to slight variations in the gauge of the film, as well as the elasticity of the material, it has been found advisable to avoid too close a register in the printing. A number of the items currently packaged in polyethylene bags utilize an inner printed label which shows through the transparent package.

One interesting bag-in-box application for food products is the frozen cream pack put up by Marwyn Dairies, Chicago. In this instance, fresh cream is filled directly into a large carton liner fabricated of polyethylene tubing. After the filling operation, the liner is closed with a fold seal and the flaps of the outer solid fibre carton are sealed with a special type of paper tape. Cartons thus packed are then placed in a sharp freezer at a temperature of minus 10 deg. F. for approximately 48 hrs., at which time the cream is frozen solid.

These "plastic cream" packs, weighing about 60 lbs., are shipped from the company's Chippewa Falls, Wis., plant to both coasts and the Gulf, as well as to intermediate points, and placed in storage. Shipment is by refrigerator car, sub-freezing temperatures being maintained with ice and salt. When it is desired to convert the cream to a liquid state, the cartons are left exposed to room temperature overnight. Then the cartons are opened, the liners stripped off and the frozen product placed in a vat for heating.

According to officials of Marwyn Dairies, the principal advantage of the polyethylene bags in this application is that the material, unlike other types of films previously used, remains flexible at the low temperatures encountered in sharp freezing and does not become brittle or crack.

A special type of Traver polyethylene bag is being used by Food Processors, Inc., Norfolk, Neb., and the Washington Co-operative Farmers' Egg & Poultry Assn., Seattle, Wash., for packaging turkeys and other types of fowl. This bag has a heat-sealed rounded end and may be employed later by the housewife as a refrigerator food-storage bag. The attractively printed bags, used for both fresh and quick-frozen fowl, permit visual inspection of the product while sealing in the delicate flavor and protecting the bird against freezer burn and handling. In packaging, the bag is positioned on a funnel-like horn and the fowl is slipped down through the horn and positioned so that the printed label appears directly over the breast. Then air is exhausted from the bag by means of a vacuum line, drawing the package tightly around the bird, and the mouth of the bag is folded shut, leaving the bird packaged in a partial vacuum.

The Farmers Cooperative Union, Inc., Puyallup, Wash., has successfully employed the bags for 25- to 30-lb. bag-in-box institutional packs of frozen logan-

berries, blackberries and other fruits. The 25-lb. bags measure 18½ by 24 in. when flat; other sizes may be fabricated to suit the needs of the user. After the liner has been filled, the open end is drawn together, rolled tightly, and the "ears" are tucked between the flaps of the outer corrugated carton, locking the liner securely in place.

Polyethylene bags printed in red and blue are used by Gulfair, Municipal Airport, Galveston, Tex., to package freshly cooked shrimp for transport by air to inland cities. The shrimp are peeled, veined, cooked and seasoned and are ready to eat upon arrival. The heat-sealed package, formed of polyethylene tubing carries a net weight of 3 oz. of shrimp and 1½ oz. of sauce. The fact that the latter includes catsup, horseradish and pepper emphasizes how inert the packaging material must be in order to meet this assignment. The Ed Martin Seafood Co., West Wego, La., is using the bags for a similar purpose. The possibility of using this type of bag for popcorn is currently being investigated, although commercial packs of this type are not yet being produced.

The bags have proved themselves useful in preserving the delicate bloom of cut flowers. The Florida Gladiolus Growers Assn., Sarasota, Fla., is now experimenting with flower shipments in which three sizes of polyethylene bags are used.

It is reported that this type of film has the property of permitting the blooms to "breathe"—an essential factor in preserving their freshness. This point is also extremely important in the pre-packaging of various fruits and vegetables, and the adaptability of the film for this purpose is also being studied.

The usefulness of polyethylene in packaging is by no means limited to food products. A case in which the material solved a definite problem in packaging a non-food item is provided by the experience of Fabricated Products Co., Chicago.

This firm makes a highly flexible vinyl chloride sheeting which is colored, printed and styled into products for the home. Among the items produced of this material is a stainproof tablecloth now being run in large volume. The company desired to package the cloth in a bag for two principal reasons—to circumvent the present boxboard shortage and to achieve the merchandising appeal of a visual package.

Tests with other types of transparent bags disclosed that some of the plasticizers in the vinyl sheeting migrated into the packaging material, causing it to become cloudy and tacky. Switching to a polyethylene bag completely eliminated this problem, due to the chemical inertness of the polyethylene film. The durability of the package also permits its secondary use by the housewife. Retail stores have commented very favorably on the new package and the manufacturer considers it a highly satisfactory application for the material.

The package for the Yardley Clearlite tablecloth is a simple envelope of polyethylene measuring approximately 7 by 11¼ in. and having a single heat-sealed seam at the bottom. The label, printed in two shades of blue on stiff white paper stock, is inserted within the package and is perfectly legible through the clear plastic envelope. This package is not heat-sealed, but closed merely by folding the end, enabling the prospective buyer to withdraw the cloth from the package for examination, if desired.

A large mail order firm is surveying the possible use of polyethylene bags in packaging blankets. It is pointed out that such a package would permit the packing of eight blankets instead of six to a shipping case, as is done with the present rigid package; would permit visual examination of the blankets without handling, and would provide the buyer an attractive re-use container. Labels would be printed on a separate sheet enclosed with the merchandise.

American Airlines is now supplying polyethylene bags for the convenience of its patrons. Into the bags may be placed such articles as perfumes and other bottled liquids likely to leak when exposed to reduced atmospheric pressures encountered in flight. Fountain pens, also prone to the same reaction, may be similarly protected. Another use for the bags in flight is a container for infants' nursing bottles. The bottles may be surrounded by crushed ice and kept safely cold for hours in one of the bags.

One soap manufacturer is investigating the possible

American Airlines uses utility bags for many purposes. Example: to pack passengers' baby bottles in crushed ice. The polyethylene film also has water- and moisture-proof qualities.

Turkey being placed in bag at Washington Co-operative Assn. plant. When bag is removed from metal slide, air is evacuated; tight wrap, quick tie leaves the bird packaged in partial vacuum.

Turkeys being placed in packing case. Production line methods at this plant permit the complete packaging of one bird every 15 seconds.

PHOTOS, WASHINGTON COOPERATIVE ASSN.

use of polyethylene bags to replace parchment in 50-lb. bulk container packs of shortening. The greaseproof properties of the film, combined with its mechanical strength, suggest that it should prove satisfactory in a bag-in-box pack for this product. The physical characteristics of polyethylene film are such as to make it totally resistant to strong or weak alkali contents. The liner bags remain perfectly stable in character because polyethylene film contains no plasticizer. Another prospective use for the bags relates to a proposed bulk pack for laundry mix, soap and washing powder. With numerous home equipment manufacturers bringing out low-temperature freezer units for long-term storage of food products, housewives have indicated enthusiastic acceptance of the versatile polyethylene film packaging kits recently introduced by Traver. The kits include several assortments of bag sizes, as well as 50- and 100-ft. rolls of polyethylene tubing, enabling the homemaker to package fruits, vegetables and other food items of practically any size for either temporary or extended storage in refrigerator or home freezer. A household utility unit of seven sized bags for normal refrigerator use is also being marketed by the same company.

The bags are fabricated from extruded polyethylene tubing, with one end heat-sealed and the other left open for filling. With this construction, maximum protection against loss of flavor and moisture content is assured, even if the bag is used for temporary storage only and the user prefers merely to fold over the open side or clip it shut with the clothespin-like plastic fasteners supplied with one of the kits.

Thanks to the high resistance of polyethylene to odors, water and moisture, the bags are particularly effective for extended storage of foods in low temperature units such as the Deepfreeze. The plastic envelopes remain flexible at sub-freezing temperatures and are odorless, tasteless and non-toxic. Resistant to brines, oils, fats, greases and fruit acids, they may be washed in warm water and reused repeatedly.

Because of their transparency, high degree of protection and the reusable feature—plus the fact that their flexibility permits them to conform to the shape of the freezer storage area and take up less space in the unit—the bags are said to be an ideal medium for locker and home freezer packaging of meats, fish or fowl. Foods which have been held in frozen storage cabinets in these packages can be served from the original bag, which will withstand boiling.

The frozen food locker bags are put up in three assortments of bag sizes, packaged in clear envelopes of 450 MST cellophane with red and blue printed label enclosed within the package. Another assortment containing seven sizes of the household utility bags is packaged in a printed cellophane wrapper and includes a set of plastic fasteners to effect a temporary closure of the packages. The extruded rolls are also packaged in a red-and-blue-printed cellophane wrapper.

In the standard home refrigerator, the bags may be used to preserve the freshness and crispness of fresh fruits and vegetables or to keep cooked foods and leftover portions palatable for a later meal. They also find other applications around the home as household storage bags for woolens, blankets, laundry and numerous other items.

When employed for long-term storage, a liquid-tight package may be obtained by heat-sealing the open end with a hot iron. The iron is set at linen ironing temperature (about 235 deg. F.) for properly sealing the 0.002-in. material. Sticking of polyethylene to the hot iron is prevented by temporarily covering the seam with a folded strip of specially treated paper, provided with the kits, during the sealing process. For especially large packages, a section of polyethylene tubing is cut to the desired length and heat-sealed at both ends in a similar manner or bunch tied.

Promise unfulfilled

There are many in the field of packaging who have been hoping that the Packaging Institute would someday find itself and function efficiently as a clearing house for the best thinking on every aspect of our many sided activity. We of MODERN PACKAGING—several of us charter members and organizers of the Institute—are among those who have clung to such hopes and worked for their fulfillment. What follows is said in regret, not recrimination.

So far, the Packaging Institute has not fulfilled those hopes. Like the Stephen Leacock character who flung himself on his horse and rode off furiously in all directions, the Packaging Institute has failed to arrive at any definite goal.

The Chicago meeting in late November epitomizes the situation. In the first place, Thanksgiving Week was an unfortunate selection for a conference. The list of speakers, as originally announced, bore little resemblance to the program as it finally shaped up. Many of the subjects discussed were remote from the field of packaging, as indeed were some of the speakers. Except for a few high spots, the program was poor recompense for the time and money spent by the busy men who attended. Apparently no effort had been made to prevent speakers from overflowing into each other's subject matter or from encroaching on each other's time. When the industry seminars were finally reached —and they were relegated to the clean-up spot—so little time was left that their usefulness went glimmering. The cancellation of the annual banquet capped the anti-climax.

Furious starts in other directions have been made, too. Large, unwieldy and overlapping committees were appointed to grapple with nebulous and ephemeral projects. If the Institute has any clear idea of what comprises its proper sphere, many of its members are still in the dark.

There is a need for a real interchange—by the conference method—of reliable and up-to-the-minute information on packaging. That fact is manifested by the numbers who hopefully attend every kind of packaging meeting. No educational institution offers courses that prepare specifically for all phases of packaging activity. The door is wide open for some organization to do a top-flight educational job for the field. The Packaging Institute has the brain-power and the experienced personnel and with proper planning could hold conferences that would be high in educational value. But the Institute must restrain its own tendency to ride off in all directions. It must formulate more definite, tangible and valid objectives for itself and it must work understandingly with other packaging groups. If it does not do these things it will die.

The need and the opportunity in 1947 will be greater than ever before. Will the long-awaited results be attained?

EDITOR-IN-CHIEF

MODERN PACKAGING

Baseball and "six-shooter" reproduced on these set-up boxes for boys' toiletries by Roycemore are designed to appeal to Dick Tracy and Bob Feller fans. Life-sized gun and baseball mit made of soap fit into die-cut trays. The Big League Triple Kit also contains shampoo and hair groom fitted in tray on either side of baseball mit. Boxes, Congress Paper Box Co., Chicago.

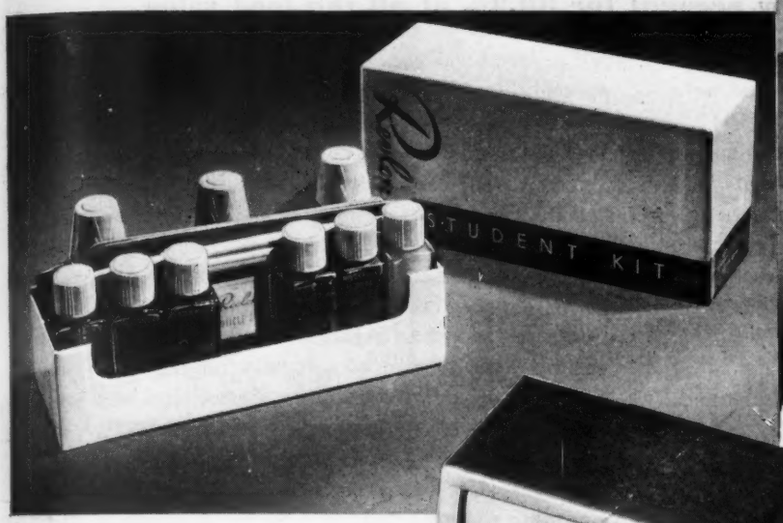
This $50 box of stationery is the sensational promotion feature of Kellogg's 1947 line of "Correspondence Elegancies." It is a hand-made marquetry chest with 25 natural woods worked into the design—an heirloom piece in re-use packaging. Designed by Dorothy Simmons, New York. Marquetry box made by Andrew Szoeke, New York.

Martex Kitchen Kits are now being marketed in a gaily designed folding carton featuring three die-cut flower pots through which can be seen the striped towels. Color scheme of floral design and box is yellow and green. Boxes, Robert Gair Co., Inc., New York.

A private mold opal glass container and a lithographed cap have been developed for Dryad deodorant recently introduced by Jergens. Container and cap, Hazel-Atlas Glass Co., Wheeling, W. Va.

Richly designed lithographed cans have replaced the former containers used by Pinesbridge Farms for its smoked turkey products. The new packaging, the company feels, is more fitting for this epicure's item. Gift set is in corrugated folding box. Carton, Grand-City Container Corp., New York.

PAGEANT



Revlon uses its standard design in this set-up box for packaging its new Student Kit containing basic equipment for use exclusively by beauty schools. The tray is designed so that each bottle is clearly visible and readily accessible to the user. Bottles, T. C. Wheaton Co., Millville, N. J. Labels, Reliable Press, Inc., N. Y. Box, Niagara Box Factory, Inc., N. Y.

Sunny hosiery for boys and girls is packaged in a full-telescoped set-up box printed in orange and black with white dots. Boy and girl silhouettes indicate suitability of product for both sexes. Design, Summon & Summon, New York. Printing, David Weils Sons Lithographing Co., Brooklyn, N. Y.

Arden's Joie de Vivre cream is packed in gold-flecked jade jar of urea plastic. Molding, Norton Laboratories, Inc., Lockport, N. Y. Material, Plaskon, Libby-Owens Ford Glass Co., Toledo. Box, Makdon Co., New York.

To assure perfect seal a gold-plated phenolic top is fitted to glass stopper for Tussy's Terpischore. Case is leather. Bottle and glass stopper, Swindell Bros. Plastic top, Crystal Plastics. Material, Marblette. Box, Mele Mfg. Co.

Die-cut platforms hold in place the bottles and oddly shaped parts in this Scale Model Kit by Continental Carriers. The set-up box has illustration of truck that can be made with contents. Kits contain pamphlet inserts with instructions on how to build the carriers. Design, Frank Higgins, Hartsdale, N. Y. Box, City Wide Carton Co., Inc., New York. Box cover wrap, Laurel Press, New York.

IMPULSE BUYING

A postwar checkup shows unplanned purchases, depending largely on package appeal, now account for 38.2% of all the food sales

Impulse buying looms larger than ever before as a factor to consider in package planning for 1947.

A prewar survey conducted by our organization and reported in MODERN PACKAGING showed that 75% of the shoppers interviewed in food stores admitted to having bought—on impulse—one or more items they had not planned to buy when they entered the store. Of the total purchases from these stores, 24.6% came from impulse sales.

A postwar checkup, conducted along identical lines, has just been completed. It shows that unplanned, or impulse, purchases now account for 38.2% of all food items—better than a 50% increase in spontaneous buying!

The moral is clear, and as applicable to other lines of packaged merchandise as it is to food: more than ever, the burden is on the package to attract the eye and make the extra sales that mean so much to the profit margin.

There is a pronounced postwar trend to self-service and self-service makes it increasingly convenient for impulse buying to flourish. Primarily, an impulse purchase is decided upon in the store with little or no advance planning. Such purchases are pick-up sales, made on the impulse of the moment—an expression of the shopping instinct of the customer. This type of buying is activated almost solely by influences within the store—display, layout, signs, suggestive selling and—most importantly—packaging.

The growing importance of this type of buying warrants careful study by those charged with the responsibility of distributing more at lower cost. Smart merchandisers know it is important to make it easy for the shopper to buy—to make her decision in the store. In gearing plans to her buying habits, sales can be speeded up, resistance reduced and distribution costs lowered.

While practically every shopper enters a store with plans to purchase some specific items, it is evident that the modern woman has veered sharply from grandmother's habit of virtually buying *only* planned items. Our postwar survey shows that out-and-out planned purchases have dropped from 75%, prewar, to less than 50% of the total food volume.

In this latest survey, 1,778 shoppers were interviewed in supermarkets in Atlanta, Cincinnati, Minneapolis, St. Louis, San Francisco, Springfield, Mass., and Yonkers, N. Y. Each interview was a double interview. As women entered the stores they were asked what they intended to buy. No intimation was given that a following interview would be made but after shoppers had completed their buying and were standing at the check-out stations, they were approached a second time, and lists of actual purchases were made. A total of 14,955 items was inspected in market baskets.

Of this total, 7,206 items, or 48.2%, were bought as originally planned and 5,723 items—38.2%—were entirely unplanned, impulse purchases. Our survey carefully screened out of the impulse classification those items which were not specifically planned but were part of a general plan (as for instance a woman who plans "fruit" for dessert but doesn't decide what kind of fruit until she gets to the store) and those

* Promotion Supervisor, Cellophane Division, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

A SHOPPER IN ACTION:

List is made out at home.

List in hand, shopping tour starts.

"Everything looks so inviting."

RE-SURVEYED

by H. D. CHICKERING*

items bought as substitutes because the item planned was not available. Of the grand total mentioned in the paragraph above, 1,645 items, or 11%, were bought from a general plan and 381, or 2.6%, were bought as substitutes. Thus our breakdown takes care of any theory that impulse buying may have been artifically stimulated by present-day scarcities.

Since less than half of the purchases were definitely planned ahead of time and two out of five items were purchased on impulse alone, then point-of-sale factors, including display and packaging, become all-important to stimulate unplanned, impulse buying.

Candy, nuts and candied fruits topped the list of impulse items, amounting to 71%. Cakes and cookies were bought on impulse in more than 67% of the cases. Dry and dehydrated fruits, vegetables and soups topped 61% and jams, jellies, relishes and spreads were bought on impulse in more than 60% of the total.

Impulse purchases of crackers, pretzels, potato chips, cheese, dessert mixes, macaroni, spaghetti and frozen foods each totaled more than 50%. A detailed product breakdown is given in Table I.

A geographical breakdown of the survey is interesting although not necessarily conclusive:

City	*Number of purchases*	*% unplanned*
San Francisco	2,783	44.3
Atlanta	2,368	72.7
Minneapolis	2,333	36.4
Springfield, Mass.	2,016	39.5
Cincinnati	1,997	65.6
St. Louis	1,962	44.7
Yonkers	1,597	65.5

Two kinds of impulse

Shopping practices are never static, but very fluid, very flexible and influenced definitely by factors at the point of sale. These factors may be the recom-

TABLE I—TYPES OF PURCHASES IN SUPERMARKETS

Products bought	*Planned*	*General plan (no specific item)*	*Substitute*	*Impulse*
	%	%	%	%
Fresh vegetables	51.9	16.9	1.1	30.1
Canned foods	41.1	11.2	2.2	45.5
Fresh meat and fish	54.7	19.5	6.9	18.9
Fresh fruit	51.8	12.7	1.8	33.7
Milk and eggs	63.6	6.6	1.6	28.2
Soap and soap flakes	49.1	6.7	3.3	40.9
White bread and rolls	59.0	14.1	2.4	24.5
Butter, lard and shortening	58.2	9.0	6.1	26.7
Coffee and tea	60.3	8.4	6.5	24.8
Cereals	50.2	8.2	1.1	40.5
Cakes and cookies	25.8	6.5	0.3	67.4
Sugar, salt, spice and flavorings	53.0	10.9	0.5	35.6
Jams, jellies, relishes and spreads	25.3	12.9	1.4	60.4
Dry and dehydrated fruits, vegetables and soups	34.1	3.3	0.9	61.7
Crackers, pretzels and potato chips	38.9	8.3	1.5	51.3
Bread (other than white)	51.7	10.6	2.7	35.0
Flour and prepared mixes	52.0	8.3	0.4	39.3
Paper towels, tissues and napkins	44.9	7.3	1.3	46.5
Candy, nuts and candied fruits	27.2	0.9	0.9	71.0
Cheese	36.1	9.3	1.3	53.3
Dessert mixes	37.6	4.1	4.6	53.7
Salad dressings and oils	45.6	9.9	1.6	42.9
Bottled drinks	54.9	6.3	1.2	37.6
Macaroni and spaghetti	37.0	8.1	0.0	54.9
Frozen foods	29.3	14.6	4.5	51.6
Miscellaneous foods	43.8	3.2	1.8	51.2
Misc. articles (other than foods)	33.8	2.4	2.0	61.8
General average (all items)	48.3	11.0	2.5	38.2

The birth of an impulse, and how it grows

"Those cookies look good."

"Cookies with the fruit . . ."

"I bought more than I intended."

mendation of retail sales people, store signs, the package or the sight of the product itself. In the absence of the first factors the package or product carries the full burden of selling itself.

While our latest survey was conducted in self-service food stores, the study was not limited to chain outlets and the basic buying habits of shoppers are not peculiar to supermarkets—chain or independent. Impulse buying reaches into the smaller neighborhood food store and studies show that proper regard toward unplanned purchases has resulted in increased profits for thousands of small stores. The secret seems to be in higher sales per customer.

Impulse buying is also practiced in variety chain stores. Woolworth from the start had a marvelous appreciation of what we have termed reminder and suggestion by arrangement of all merchandise within sight and touch. Others followed and surveys now show that 51% of sales in variety stores are on impulse.

Self-service and self-selection are an increasing factor in the drugstore field too. Here also the whole trend has been to flash before the eye and prompt buying.

In the department store field, open display of appropriate products for self-selection has definitely proved its value as a sales builder and time saver for both customer and clerk. In a survey we recently conducted among a cross section of department store executives, 98% stated that open display did increase sales. In the same survey it was found that 86% of the stores believed that effective packaging of products displayed influenced customers to serve themselves or specify certain merchandise.

Looking into the hardware field, the type of store operated by Sears and Ward, the tire and accessory store and the filling stations, it is again apparent that recognition is given to the impulse buying habits of modern shoppers. Open displays of packaged merchandise are the major factor in this important profitable operation.

It is well to examine the requirements this type of merchandising places on the product. First of all, it must be presented in such a way that the product can be picked up and examined. Bulk merchandise is out. It must be packaged. The less time a clerk has to spend in weighing, counting, wrapping and making change for one customer, the sooner the next one can receive attention. Prepackaged products, clean and ready for instant purchase, are the answer.

The packaging musts

Here are the significant "musts" for packaging if it is to do an adequate job of attracting impulse purchasers:

The package must attract attention—It must compete effectively in the all-important split second to catch a prospective purchaser's eye and hold it. It must be a "shopper stopper" in every sense. Color, design, shape—all are major tools in (*Continued on page 172*)

The hardware store, too, catches the impulse sale. Who would have thought that a hammer could be so attractively packaged as this and make such an appealing gift item? PHOTO, DU PONT.

Modern druggists know how much package eye appeal adds to his sales when the packages are grouped in aisle and counter displays where they will catch the shopper's eye. PHOTO, OWENS-ILLINOIS.

KODAK'S NEW LAB

Kodak packages are put through a scientific proving ground to determine their performance. This general view of the new laboratory shows part of the desk space in the foreground and some of the testing devices in the background.

One of the most complete in private industry; follows by test performance the entire course of treatment a package gets in shipment from factory to consumer

As part of a comprehensive program to perfect package performance as well as design, Eastman Kodak Co. has recently constructed a large, modern package testing laboratory which is regarded as one of the most complete in private industry.

The laboratory, occupying 2,500 sq. ft. at the company's largest manufacturing division in Rochester, N. Y., operates in conjunction with Kodak merchandising and materials-testing experts to assure products reaching the customers in sound condition.

Utilizing a variety of standard package-testing devices, as well as some adaptations conceived at Kodak, the newly finished laboratory is part of a coordinated packaging program described in detail in MODERN PACKAGING, Oct., 1945, p. 91.

The laboratory, part of the company's Package Engineering Service in the Industrial Engineering Department, was designed especially to test performance characteristics and structural strength of completed packages and to determine the effects on Kodak products of shipment and storage in those packages.

Before scientific results could be obtained from the laboratory, however, explains Kenneth R. Marvin, supervisor of the Package Engineering Service, a survey was necessary to find out just what treatment today's packages would get during their route from factory to consumer.

Consequently, Kodak undertook an intensive study upon which to base some of its laboratory tests. Because of the peculiarities of photographic equipment—such as light sensitive paper and film—and the tremendous variety of packages, some 35,000, it was felt necessary to gather this information to supplement standard testing procedures established by the Ameri-

can Society for Testing Materials and the Testing Assn. of Pulp Paper Industries.

Standard tests already in existence were developed mostly for shipping cases. Kodak believed that these tests should be extended to small unit packages, as well, and should cover the whole range of distribution.

The survey, therefore, began at the production end of the line and covered a cross section of the company's output—photographic film, paper, chemicals, cameras and allied equipment.

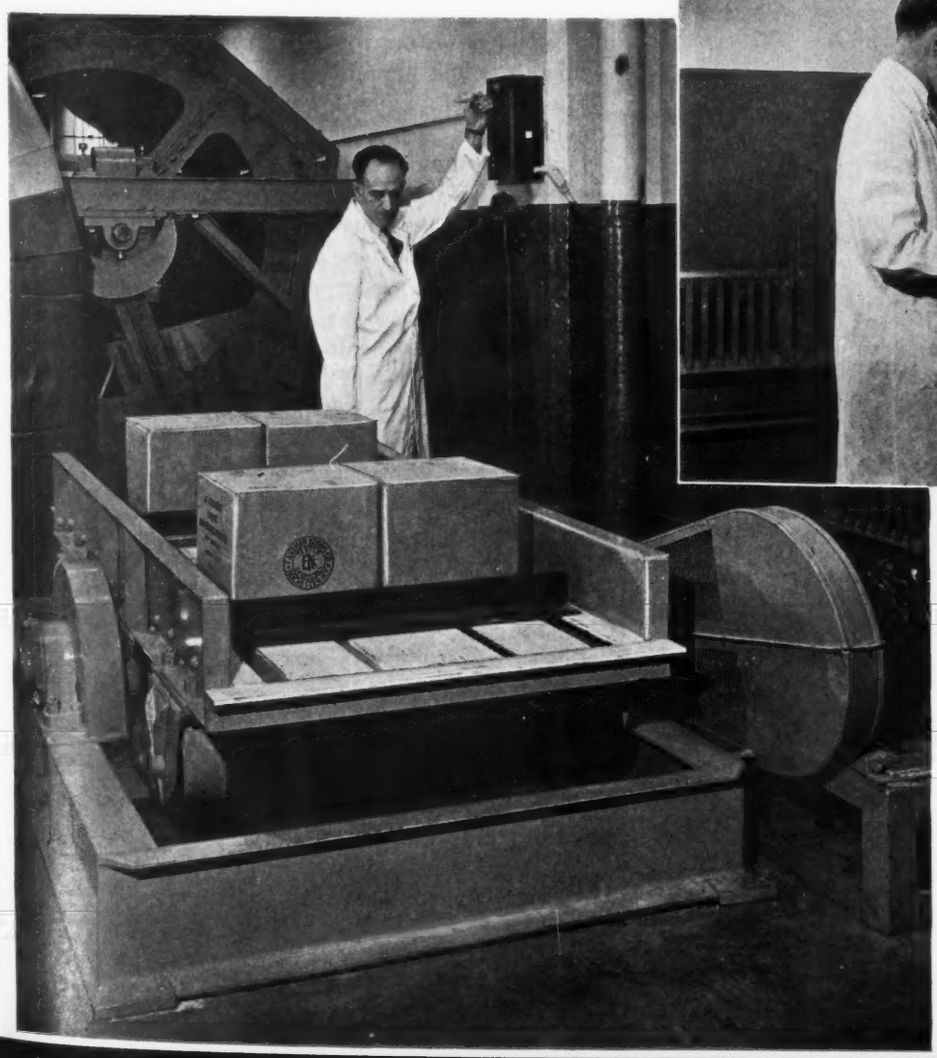
Two packaging engineers followed the course of the selected products from the factory to the shipping department, to the carriers, on to the Kokak wholesale distribution branches, dealers and retail buyers.

In addition, the aid of railway and trucking companies was enlisted to bring out more information. The results, now in the process of analysis, are expected to enable the laboratory to improve on the standard testing procedures in so far as they apply to Kodak's special packaging problems.

Periodic follow-ups are considered to keep up with changing transportation or storage conditions and to

At work is Adrian C. Runions of the laboratory staff, making a sample carton for one of the company's hundreds of different products. The laboratory was designed especially to test performance characteristics and structural strength of completed packages and to determine the effects on Kodak products of shipment and storage in those packages by the most modern methods.

F. E. Wadman of the laboratory throws the switch to start the lab's new vibrator as one test of Kodak's Acid Fixing Powder cases. The large tumbler is in the background. The laboratory is equipped with a variety of standard package-testing devices as well as some adaptations developed especially for Kodak problems. The laboratory occupies approximately 2,500 sq. ft.



About to be drop-tested, this box is balanced in an upright position. The drop-tester is a conventional, adjustable device equipped with a trap door through which a package drops on to a steel plate. Kodak tests are usually set to give a force of approximately 50 foot-pounds, which is considered adequate for most of the company's packages in their day-to-day usage.

A shipping case is placed on the Conbur's dolly while Bertha Gilbert, a laboratory assistant, takes notes on package performance. This is a device for testing impact. The company augments the use of the standard device by means of a narrow track built between the regular width rails to handle small packages.

This tumbler, three feet in diameter, was built specially for Eastman Kodak Co. to use in testing small packages such as the one shown, which contains photographic paper. The tumbler simulates general rough treatment received by the packages in transit. This device is a miniature version of the one at top of the next page. Using this device for small packages is unusual.

make certain that the "lab" tests really duplicate the day-to-day life of Kodak packages.

When material is available, the laboratory will be completely air-conditioned at a relative humidity of 50% and a temperature of 70–73 deg. F. (In materials- and products-testing rooms at various Kodak plants, temperature and humidity may be regulated to duplicate any sort of a climatic condition from arctic cold to tropical heat.)

Lighted by fluorescent lamps, the laboratory is roomy, pleasant. Testing equipment occupies most of one end, office space the other.

The "lab" will use these principal testing devices:

1. *Compression tester*—Of standard construction, this apparatus determines the package's resistance to compression and gives information on the quality of the board and its fabrication.

2. *Fatigue loader*—A structure for holding any predetermined weight, this simulates the stress put on a package under storage conditions. By using microswitches, it is possible to determine the point of package failure under the load.

3. *Vibrator*—Moving simultaneously in vertical and horizontal planes, the vibrator has a two-inch throw and operates at a frequency of 250 cycles a minute. It simulates the vibrations of railway cars, trucks and conveyors, and assists in the measurement of a package's resistance to abrasion or to other weaknesses of a structural nature.

4. *Tumblers*—The "lab" has two, one seven feet in diameter, the other, designed for Kodak, three feet in diameter. Revolving at $1^5/_6$ r.p.m., the tumblers simulate general rough treatment received by packages in

transit. The large tumbler is for sizable shipping cases; the smaller drum for small unit package testing.

5. *Drop tester*—A conventional, adjustable device, this apparatus with its hinged "trap-door" design drops a package on to a steel plate. Kodak tests are usually set to give a force of 50 foot-pounds.

6. *Conbur impact tester*—In addition to using this standard, inclined testing device, Kodak also utilizes a narrow track, about 15 in. wide, built between the Conbur's regular width rails. On the narrow track the laboratory uses a small dolly to test packages of less than shipping case size. The larger, standard device simulates the impact packages receive during freight car switching, for example, while the miniature rail-dolly permits "shock" tests on smaller containers.

7. *Cushioning meter*—A standard instrument to measure the amount of cushioning provided by various types of inner packing.

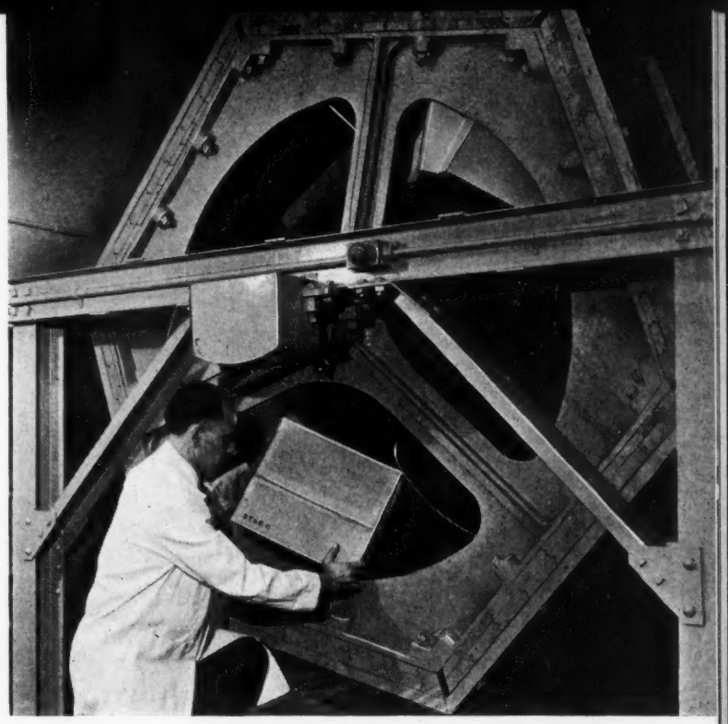
Highly useful in the laboratory is the sample-making equipment by which packaging engineers are able to make finished-type cartons or boxes. These samples are not only valuable for testing purposes but also can serve as "master copies" for mass production. In addition, they can be used to show the final art work.

Of special note in the Kodak package set-up are two check lists, one for merchandising, one for performance. These lists offer a guide to efficient design.

Both lists, of course, are considered together when developing a new container and they are in constant use in Kodak's package laboratory.

The Design Service and Engineering Service are separate departments which, together, work out Kodak's packaging problems.

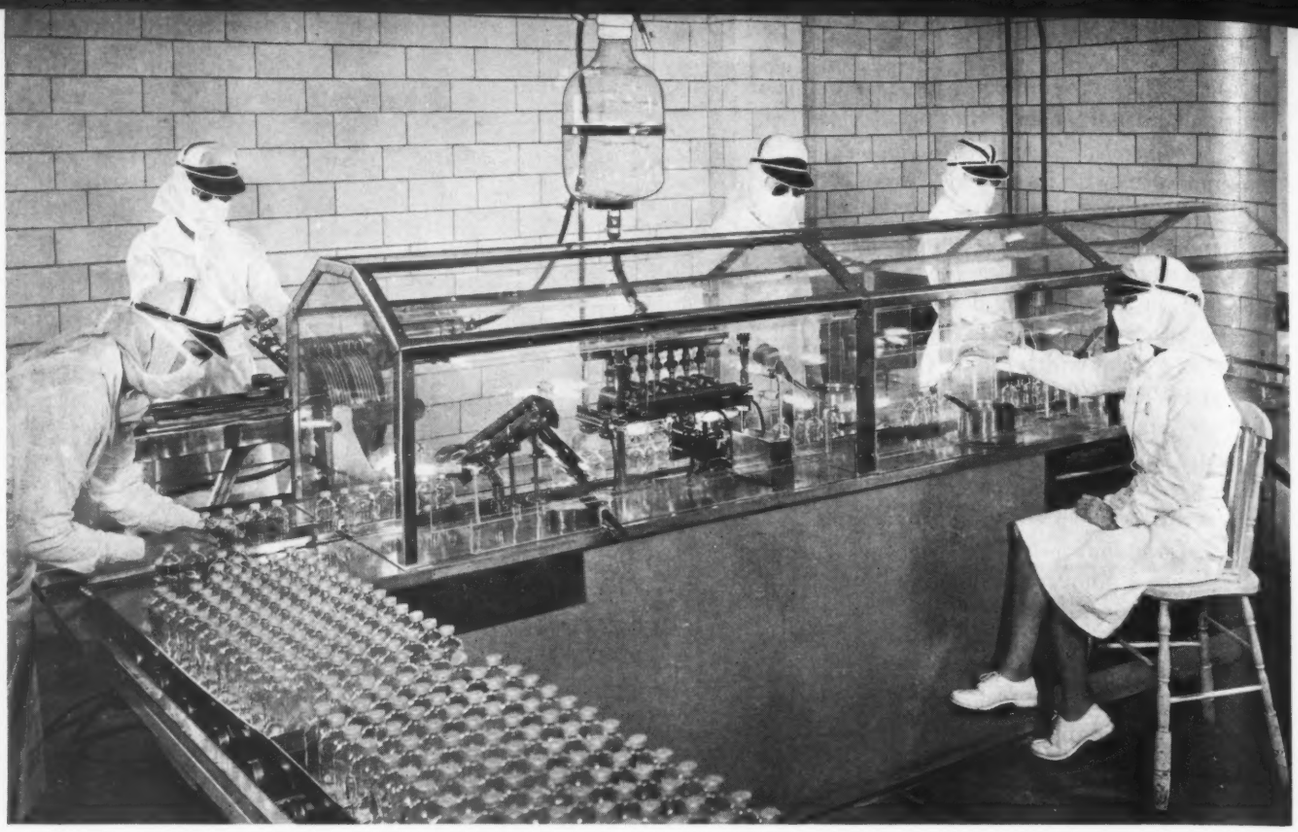
The packaging field survey, incidentally, will be used to amplify the check lists in the light of new data gained from actual production-transportation-storage studies.



Here is shown the big tumbler, seven feet in diameter, which is used at Eastman for the tumble-testing of the larger-sized shipping cases. The tumbling wheel is adjusted to run at the rate of slightly less than two revolutions a minute. The amount of abuse a container may be expected to withstand in regular shipment can be determined on this standard device according to the number of revolutions an identical, filled container will withstand in the tumbler.

After the shipping units have been put through all the tests, the complete results are studied. From the findings, the packages are either accepted or the laboratory makes recommendations for improving weaknesses. The photo shows units being opened after they have taken all tests.

After package performance is proved, the products start their journey to the customer. Here shipping cases containing X-ray film are being loaded into a refrigerator car at Kodak Park, Rochester, N. Y. Package engineers are now tabulating results on actual studies of company products from the plant to the ultimate consumer.



Empty sterile bottles, hooded with aluminum, enter plastic enclosure from left. Temporary caps are automatically removed and expelled through chute. Product is filtered through seven heads from glass container overhead. Freshly sterilized rubber caps are applied by forceps after filling is done.

STERILE FILLING

Frederick Stearns' new plastic-hooded line for the bottling of intravenous solutions is a model of aseptic precaution in packaging

A new type of sterile filling machine for bottling Parenamine, amino acid solution for parenteral injection, has been designed and built by the engineering department of the Frederick Stearns & Co. Division, Sterling Drug, Inc. Now in operation in the Detroit laboratory, after repeated tests, the apparatus replaces previously slow and laborious hand work.

Because of increased demand for the preparation, used in medicine for providing protein requirements to the seriously ill, wounded or burned, Stearns had long sought a mechanical filling unit that would maintain the sterility so necessary in solutions injected into the veins. Nothing suitable was available, so Stearns' engineers started building their own a year ago.

The resulting unit has been installed in the Parenamine filling room, which itself is kept sterile by germicidal lamps. From the glass-lined sterile vats where the mixture is prepared, the finished Parenamine is brought in containers to a mobile filter press inside this room. Prior to each use the filter press and filling machine are sterilized by live steam.

The entire filling apparatus is completely enclosed under a methyl methacrylate hood. The mobile filter press is attached to a special 20-liter Pyrex glass container projecting from the central section of the plastic hood. This glass container feeds the solution direct to a filling head, where seven bottles can be filled automatically and simultaneously. This filling head section is so designed that it can be easily removed for sterilization.

Sterilized bottles are fed into one end of the plastic hood and are carried under the filling head and out the opposite end on a moving stainless conveyor chain. From the moment of entrance until the exit, the moving bottles are constantly subjected to bacteria-killing ultra-violet rays. Sixteen ultra-violet lamps, each effectively placed, comprise this additional sterilizing precaution inside the installation.

To safeguard their interior sterility, each bottle that moves into the apparatus is fitted with an aluminum cap. Part of the automatic process consists of the removal of these caps under the plastic hood and their

rejection through a slot before the bottles reach the filling head.

After the bottles have been filled, newly sterilized rubber caps are immediately fitted in place. The caps are further sealed to prevent any tampering prior to use.

Machinery for operating the conveyor and the filling head is enclosed beneath the filling space, which is table height from the floor. While a system of electrical cams now operates the filling head, electronic controls will eventually be used for this purpose.

The apparatus is equipped for filling three sizes of bottles—100 cc., 500 cc. and 1,000 cc. It has a capacity filling speed of 2,000 bottles an hour, according to William J. Boegly, vice president and plant engineer in charge.

This sterile filling room is staffed by young women operators dressed in white, who wear masks to prevent the possibility of contamination and who are equipped with special goggles to deflect the ultra-violet rays which might be harmful to eyesight. One operator feeds the empty bottles from the conveyor into the covered filling unit. Another is stationed at the filter press. Two operators, hands covered with rubber gloves, use forceps to place the rubber caps on each bottle. A fifth girl is stationed at the end of the line to inspect each sealed bottle as it leaves the line.

PHOTOS, FOOD FIELD REPORTER

ZIPPER BREAD WRAP THAT RECLOSES

One of the few new ideas in bread wrapping to make its appearance since the war is the "Ever-Fresh" wrap just introduced by the Fischer Baking Co., Newark, N. J. It has patented reinforced end caps with a cellophane center section and one of the end caps has an integral tear tape which permits the cap to be removed whole. Slices of bread are removed as desired and the end cap is then replaced to protect the remainder of the loaf.

Extra stiffness is given the cap by an additional ply of waxed paper. Special coloring and labeling of the top end call attention to the tear tape, which is pre-perforated and has a tab about 1/4 in. long protruding on the bottom of the loaf. The buyer is instructed to stand the loaf on end and "zip the red strip" from the bottom of the loaf all the way around.

A folder which introduces the new wrap explains that sliding the removable cap back over the loaf forces most of the air out of the package and helps to keep the bread fresh to the last slice.

As slices are used the end of the regular wrap can be folded over the end of the loaf, under the cap, to provide an additional protective layer. The farther the loaf is reduced in size, the greater the protection, as the two end caps eventually telescope, one over the other.

Minor adjustments of standard end-feed bread-wrapping machinery, including a special cutter blade, permit this functional wrap to be used at no greater cost, it is said, than many conventional wraps. Consumer reaction is said to be favorable.

CREDIT: *"Ever-Fresh" wrap by Milprint, Inc., Milwaukee.*

MP Display

It's not a meal without POTATOES
STATE OF MAINE
PACKED TO GRADED QUALITY UNDER FEDERAL-STATE INSPECTION
POTATOES
15 LBS NET
STATE OF MAINE
OVER 300 BRANDS TO CHOOSE FROM

Maine's "Potato Boy" is being used again this year in a new promotional display by the State of Maine potato growers. His figure has promoted the state's product for 10 years and this paperboard display piece is said to be the most practical yet produced. The wheelbarrow opens out to form a platform to hold a 10- or 15-lb. bag of potatoes. It is lithographed in six colors, measures 42 in. high by 31 in. wide. Shipped in a flat envelope, it sets up in seconds. The Potato Boy has become an institution in the produce field and is credited with being a master spud salesman. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

Use of displays for promotion of state products is gaining in popularity. Here is State of Michigan apple display. It features a rosy-cheeked girl with an appealing smile. The basket beside her is filled with appetizing Michigan apples. The child first appeared on the Michigan displays several years ago and each year grows a little older. She has become synonomous with Michigan apple advertising. Display, Einson-Freeman Co., Inc., Long Island City, N.Y.

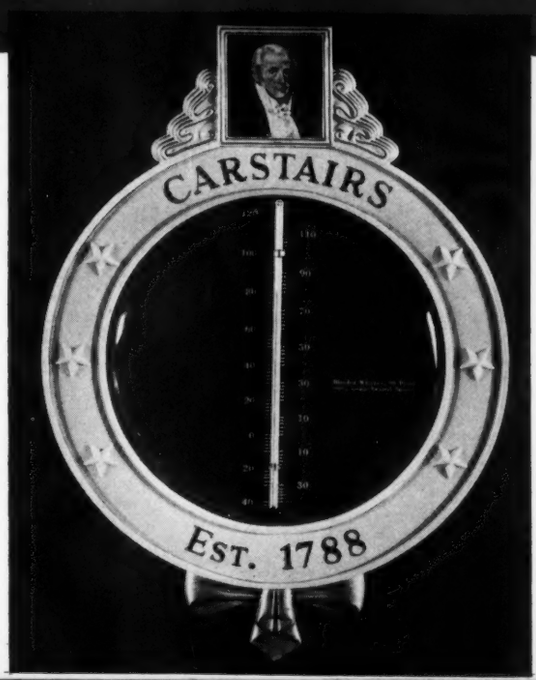
Djer-Kiss entire line of cosmetics and toiletries is highlighted in this multiple window display. It consists of five separate cards in addition to a perfume counter card. Tie-in keynote is the "Be Romantic Tonight" theme which characterizes all Djer-Kiss advertising. Actual colors of the new packages are featured against an eight-color background dominated by a feminine face.

Gallery

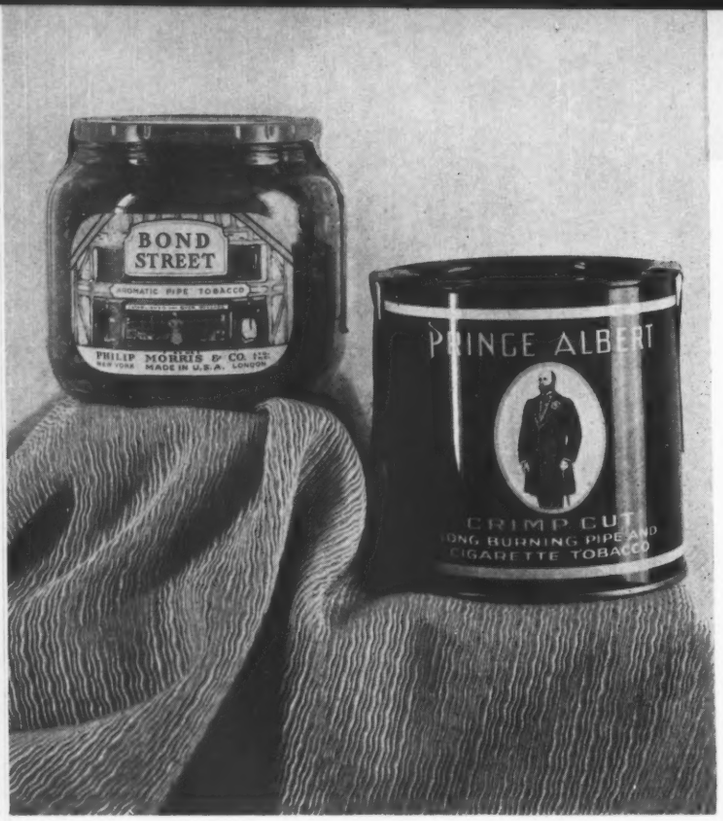
Less than half a square foot of counter space is needed for the new counter and store display for the Westinghouse Bug Bomb aerosol dispenser. This compact paperboard carton holds six Bug Bombs in a convenient manner for selling. Product is delivered in the carton and a flip of the top cover turns it into a colorful display piece. The cover, which forms a back piece for the display, is die cut and carries a reproduction of the bomb in use. The sales message is clearly printed on the back piece as well as on the front of the carton and can be easily read from a distance.

Three individual paperboard pieces comprise the Ace Bandages display for compression bandaging. The three may be used together for window display, and for store or counter purposes they may be used separately. Sell copy features the fact that compression bandaging is a new medical discovery made during the war for quick relief of pain by burns. Display, Hussey-Woodward, Inc., New York.

Carstairs Distillers Corp. have introduced a new permanent thermometer wall display to promote their blended whiskey. The body of the display is molded of opaque acetate, cream colored and the lettering is in red. Wording is limited to "Carstairs, Est. 1788." The blue silk-screened background of the thermometer is protected with a curved sheet of transparent acetate. The four-color portrait at the top of the display is of Thomas Carstairs. This, too, is protected with a covering of transparent acetate. Copy to the right of the thermometer reads: "Blended Whiskey, 90 Proof, 65% Grain NeutralSpirits." Design, Michael Saphier Associates, New York. Fabrication, The Design Center, Inc., New York.



LIGHTING THE



Glass jar on left has matte-finished label; metal can has shiny, lithographed surface. Concealed to right of display is a luminous panel; while to left is a single fluorescent lamp. Note that the shiny can picks up a broad, lower-brightness highlight from the panel, as compared with a narrow, brighter highlight from single lamp on other side. While these help define shape of container, the broad one interferes less with legibility of lettering. With the other package, the panel and single lamp create spot highlight on the glass but matte surface of label does not pick up highlights.

Legibility of lettering is a matter of inherent contrast with background. Higher brightness of "cherries" on upper can makes it more legible under same light than on lower can where darker values are used. (Film sensitivity to red over-emphasized this effect in black and white photo.) Customer will see and read brighter label first. Difference in contrast is also apparent as factor in attention value of message on Ry-Krisp box compared with noodle bag under the same lighting.

Position of the lighting unit in relation to packages having glossy surfaces may greatly affect appearance and readability. In the picture at left, light comes from the sides, creating vertical highlights, which in some cases practically obliterate the package. In the picture to the right, lighting is from above and below and the package printing is clear and sharp. The only reflected images are small horizontal ones helping outline packages.

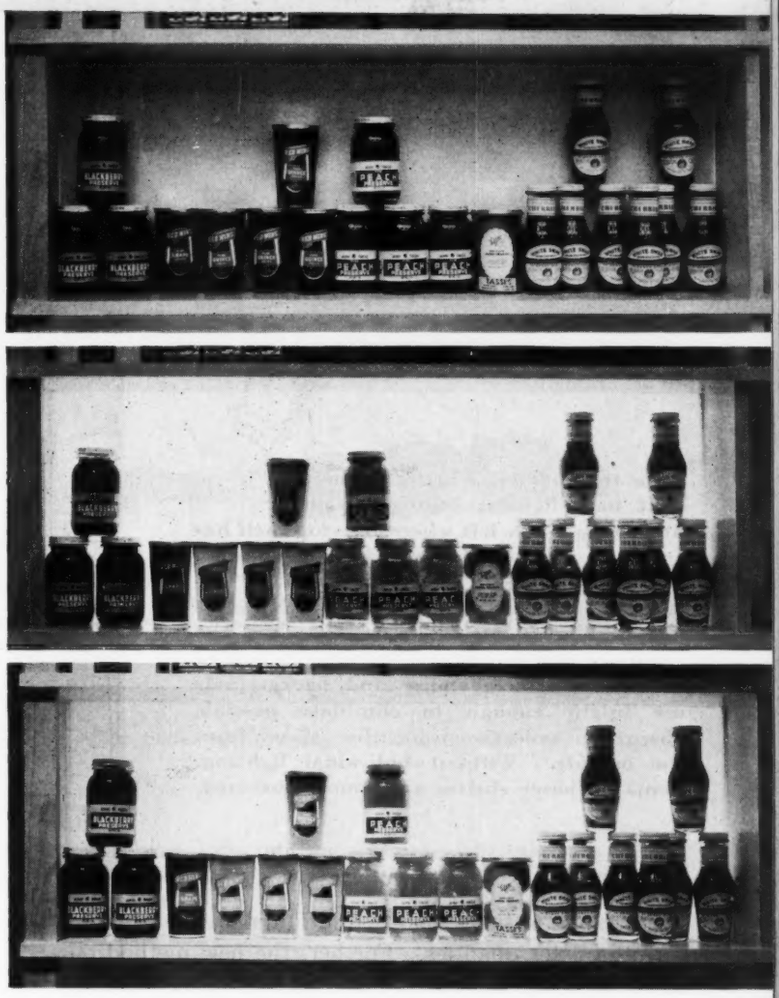
PACKAGE . . . for effective selling

by C. M. CUTLER*

The emphasis that is being placed today on package design makes very clear the awareness of manufacturers and merchants that appearance of packaged merchandise, as well as contents and price, is an important factor in customer preference.

Design for effective appearance of the package depends on the message and the way it is presented; the handling of form, color and detail; the materials selected and their textures. Light, properly applied, can augment each one of these considerations, can increase the effectiveness of a given design by facilitating fast, easy and accurate seeing, and can increase attention value through higher brightness.

The full benefits of good package design can only be realized with good lighting. Today the merchant has new opportunities for better lighting through a



Group of three pictures shows steps in increasing shelf display effectiveness of glass-packed foods. Top, with only general lighting from ceiling luminaires, labels are readable but contents appear opaque. Center, glass back panel has been lighted, drawing attention to shelf and showing off foods to better advantage. Bottom, the addition of spotlights throws more emphasis on labels, thus greatly improving their readability.

* Illuminating Engineer, General Electric Lamp Dept., Nela Park, Cleveland.

In these "before" (left) and "after" (right) pictures it can be seen that spotlights add sparkle, highlights and shadows, and higher brightness to what was a flat, relatively uninteresting display. Reflector and projector lamps afford very simple and economical ways of achieving bright, attention-compelling displays. These are important in creating over-all store atmosphere as well as in stepping up productivity of merchandising space.

This is an illustration of a simple and effective method of adding lighting to shelves and at the same time providing a luminous price card strip which commands the attention of customers who may pass display.

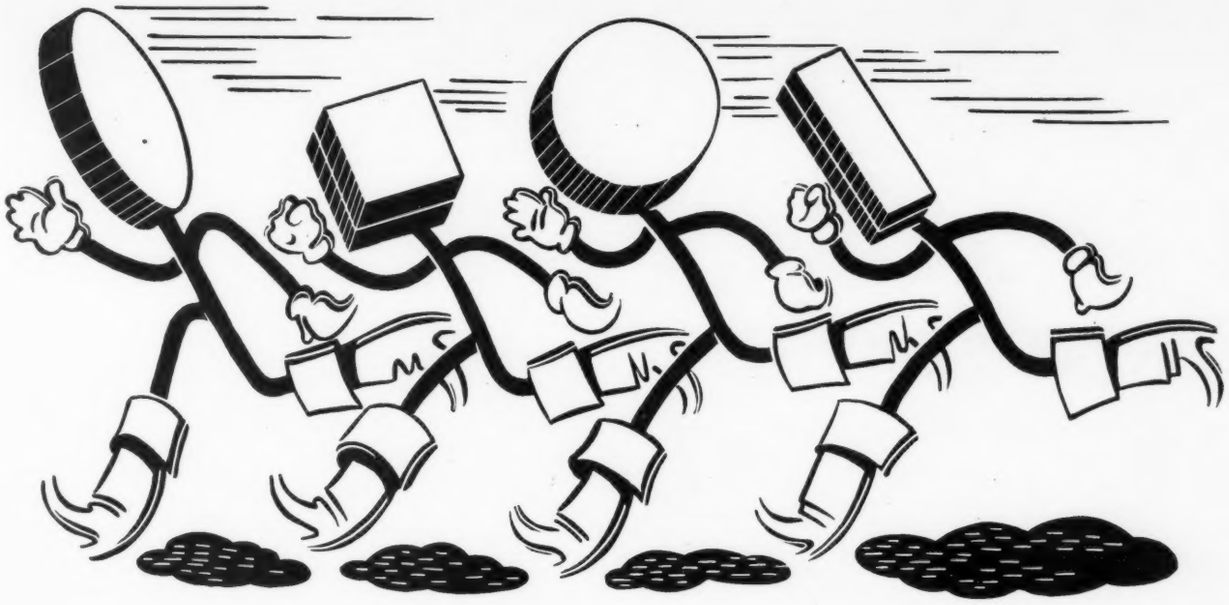
Note the difference between shelves that have lighting built in (right) and group at the left where only top shelf has sufficient light. Can there be any question by anyone as to which will command the shopper's attention? There is a sliding glass door which extends over part of each of the groups of shelves. In the individually lighted shelves, the merchandise and backgrounds are bright enough to eliminate possible obscuring reflections in the glass from the outside. Without individual lighting, items on lower shelves are almost obscured.

wider range of light sources and luminaires, a greater range of color qualities. Further, the new method of lighting gives emphasis to places where packaged goods are normally displayed in show cases and shelves.

This method is based on three specific functions light can play as a partner to modern merchandising.

First, throughout all selling areas there must be enough of the right kind of light for customer to *appraise* items fairly and accurately, because satisfaction is based on knowing exactly what they are buying at the time and at the point of sale. Second, by means of higher levels of brightness, *attention* can be attracted to certain areas of merchandise, thereby promoting faster turnover and tending to influence the flow of traffic throughout the store. Third, light can help to create stimulating and distinctive *atmosphere* in the store. Well-designed lighting puts attention on merchandise yet provides pleasant surroundings to shop.

Photographs below clearly show the greater attention value tc be achieved through the use of concealed frame lamps. Lighting from overhead luminaries only (left) gives items in this display a rather flat appearance. When lamps concealed in the frame are added (right), the display glows with brightness and the packages are given full dimension.



With the speed of SEVEN-LEAGUE BOOTS

That's practically what it amounts to: Burt's automatic package production line gets them to you—if not in seven-league boots—in double-quick time.

When orders for set-up boxes (round, oval, square or oblong) run into the millions—when the market zooms—speed counts.

Burt is fast.

Burt machines (specially designed and built by us) work automatically—require a minimum of hand operations—save time.

The fact that Burt is centrally located to all forms of transportation—rail, water, highway—eliminates delivery delays.

Bring your biggest orders to Burt and watch them travel.

F. N. BURT COMPANY, INC.

500-540 Seneca Street, Buffalo, N. Y.

New York City • Philadelphia • Boston • St. Louis • Atlanta • Chicago • Cleveland
Cincinnati • Los Angeles • New Orleans • Memphis • Minneapolis • Kansas City
San Francisco, California • Newark, New Jersey

CANADIAN DIVISION:
Dominion Paper Box Company Ltd., 469-483 King St. W., Toronto 2, Canada

Deluxe is the word

for the PRODUCT and the PACKAGE

The J. B. Carr Biscuit Company has been making fine biscuits since 1870—and has seen to it that its packages express the quality for which Carr products are noted.

Like so many others who stress perfection in packaging, this long-established organization has standardized on Package Machinery Company machines.

For handling their wide variety of package sizes they've found the Model FA ideal, because this machine is quickly adjustable, and requires a minimum of supervision. Where printed transparent wrapping material is used, the FA is equally prized for its uniformly accurate registration of the printed design.

With a speed of up to 100 packages per minute, the Model FA will give you a welcome SAVING in wrapping costs as well as a package that SELLS.

Why not get all the facts about this most widely used of all wrapping machines?

Write for leaflet on the new FA

PACKAGE MACHINERY COMPANY, Springfield 7, Massachusetts

30 Church St., New York 7 • 111 W. Washington St., Chicago 2
101 W. Prospect Ave., Cleveland 15 • 849 Marietta St., N. W., Atlanta 3 • 443 S. San Pedro St., Los Angeles 13
320 Market St., San Francisco 11 • 18 Dickens Ave., Toronto 8

The new Model FA

PACKAGE MACHINERY COMPANY

Over a Quarter Billion Packages per day are wrapped on our Machines

INSECTS . . .

and how to control them; more data from the Berkeley study of package pests and the storage conditions which favor growth

by A. E. MICHELBACHER*

Shortly after our entry into World War II, an Insectproof Container Project was undertaken by the Division of Entomology and Parasitology of the University of California at Berkeley. The investigation was conducted in cooperation with the Office of the Quartermaster General of the United States Army. The prime purpose of the project was to test the insect resistance of packaging materials used as a substitute for glass and metal. The work was conducted under the leadership of E. O. Essig by the following committee: W. M. Hoskins, E. G. Linsley, R. Craig, Ray F. Smith and A. E. Michelbacher.

Some of the progress made on the project has been reported in the July, 1944, and July, 1945, issues of MODERN PACKAGING. None of the packaging materials tested has been found to be wholly resistant to penetration by insects. A number, however, were penetrated only after being subjected to very severe conditions. Among the most resistant packages tested were carefully machined fibreboard cartons which had been double wax-dipped in a thermoplastic wax. Such cartons would not be in danger of being penetrated under any ordinary conditions. Penetrations have only occurred when they have been exposed to the severest of environmental conditions, and then only by the more effective insect penetrators.

Although there are many insects that attack stored food products, there are relatively few of these that are effective in penetrating packaging materials. In all there are approximately 1,500 species of insects that are closely associated with stored products. Of this number not more than 50 are of any great importance.

Origin and characteristics of insects

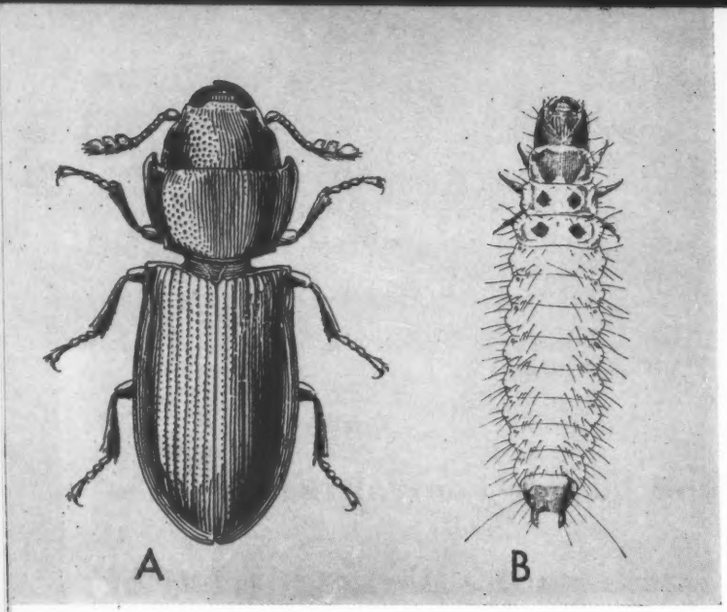
A question that might be asked is: where did these stored-product pests originate? It is safe to conclude that they were all present on this earth before man started to store materials for his own use. They were living in some natural habitat. Many of them were probably living in the nests and bedding places of animals and birds. Others were probably associated with the nests of insects, while others fed upon accumulations of material that collected under bark of trees and similar protected places. Their food consisted of materials stored in the nests, dead animals, cast skins of insects, hair, feathers and other animal and plant waste.

Another group of insects included those that fed on dried seeds. This group is represented by such important pests as the granary weevil, rice weevil, and bean and pea weevils. When man started to store foods and other materials, these insects moved in and frequently found conditions ideal for their activity and development. In many cases they found an environment more suited for their development and multiplication than that encountered in nature.

Most of the stored-product insects are very small. There are a few that are rather large. Among these are the yellow and the dark mealworms, cockroaches and the cadelle, *Tenebroides mauritanicus* (Linn.) (Fig. 1). The latter proved to be the best penetrator with which we worked (Fig. 2). The adult is black and measures about $^3/_8$ in. in length. The larvae when full-grown attain the length of about $^1/_2$ in. A number of the moths that attack stored products fall in the same size range as the cadelle. Notable among these are the Indian-meal moth, *Plodia interpunctella* (Hbn.) and the Mediterranean flour moth, *Ephestia kühniella* Zell.

The majority of the stored-product insects are so small that a single kernel of wheat or its equivalent furnishes sufficient food for an individual to complete its entire development. With some species a wheat kernel furnishes sufficient food for the development of two or three individuals. As a result of the small size of most stored-product pests, only a small amount

* University of California, Berkeley, Calif.



1. Cadelle, *Tenebroides mauritanicus* (Linn.): A, adult; B, larva (A, x 8.5; B, x 6). Is one of the most troublesome of stored-product pests.

2. Strong boring habits of cadelle are illustrated by this photo of a board from floor of grain storage bin. Insects retreat into burrows when bin is emptied; when filled again they come out to infest the new products placed in storage.

of food is needed for the development of rather large populations.

Most of the stored-product pests developed in the warmer portions of the world. As a result, except in a few cases, they have no hibernation period. Their activity is regulated almost wholly by temperature. Most of the species are not adapted to withstand low temperatures and are killed if subjected to temperatures of 30 to 40 deg. F. for prolonged periods. Subzero temperatures cause death in a relatively short period of time. Optimum temperatures for their activity and development range between 70 and 95 deg. F. Temperatures of higher than 95 deg. F. have an adverse effect and exposure to a temperature of 120 deg. F. for an hour causes death. Under favorable conditions of temperature and humidity some species can complete a life cycle in from four to six weeks and may pass through six to 10 generations in a year. It is their ability to multiply so rapidly that accounts in a large measure for the serious damage stored-product pests are able to inflict to the stores of man.

Environmental conditions

Nearly all of the stored-product pests are adapted to living in foods having a low moisture content. Some species can live in food having a moisture content of less than 5%. However, in most cases the moisture content for optimum development ranges from about 10 to 17%. Many species cannot exist or do poorly if the moisture content of food is 8% or less. Where the moisture content goes much higher than 17%, molds and other types of deterioration set in, making conditions unfavorable for the development of most stored-product pests.

Stored-product insects are adapted to living on many different types of food. Some are limited to living in seeds. To this group belong the bean and pea weevils, rice weevil and the granary weevil. The latter two are also able to live in cereals such as spaghetti and macaroni. There are others that feed primarily upon animal products. Others feed upon a wide assortment of foods that include spices, animal products, drugs and cereals. Dried fruit, nuts and cereals furnish the principal foods for others. The physical condition of the food is also of importance. The drugstore beetle, *Slegobium paniceum* (Linn.), for instance, is able to live in the coarser types of cereals, but is apparently unable to develop in the finer types.

The subject of insect penetration of packages can hardly be considered without discussing sanitation. Investigations have shown that under severe conditions of storage even the better packaging materials are subject to penetration by the more effective penetrators such as the cadelle and termites. Therefore, warehouses and other storage structures should be kept clean and free of insect infestations.

The accomplishment of this has been greatly aided by the advent of DDT and the demonstration of effectiveness of DDT residual sprays against most of the serious stored-product pests. For the present, at least, DDT residual sprays should be used with considerable caution. Care should be exercised to avoid wetting parts of equipment which will come in contact with food, utensils and food stuffs. DDT probably should not be used to spray bins for the bulk storage of foods, although it can be safely used to spray storage areas for packaged products. Sprays containing as high as 5% DDT have been recommended for residual treatments. In an investigational study now under way in our laboratory a $^1/_2$% DDT water suspension spray, thoroughly applied, has been found to be very effective against a large number of stored-product pests. It has remained effective against some for a

period of seven months, the length of time that the investigation has been under way. Where good sanitary conditions are maintained many of the commercial packaging containers offer satisfactory protection against insect penetration.

In order to facilitate the carrying out of sanitary measures, bins, storage spaces, warehouses and similar structures should be so constructed that they can be easily cleaned. Tightness is desirable because all sources where materials might accumulate and furnish food for insects should be eliminated. Further, tightness is a factor in preventing pests from gaining entry into storage units. The construction should be of a type that will insure dryness. A dry environment is unfavorable for the development of stored-product insects, and thus discourages penetration. Breakage of packages and the contamination of packages with food materials favor insect infestation, and the nourishment thus obtained also prolongs the life of the insects. Because of the favorable conditions offered by contamination, every effort should be made to reduce breakage to a minimum.

Besides food, temperature and humidity have been found to be very important factors influencing penetration of packages by insects. Tightly sealed packages held at 60 deg. F. or lower in a dry atmosphere are in no danger of being penetrated. As the temperature is increased, conditions become more favorable for insect penetration until a temperature of about 90 deg. F. is reached. An increase in humidity also favors penetration. In general it was found that the temperature and humidity most favorable for insect development were also the most favorable for insect penetration.

Packaging considerations

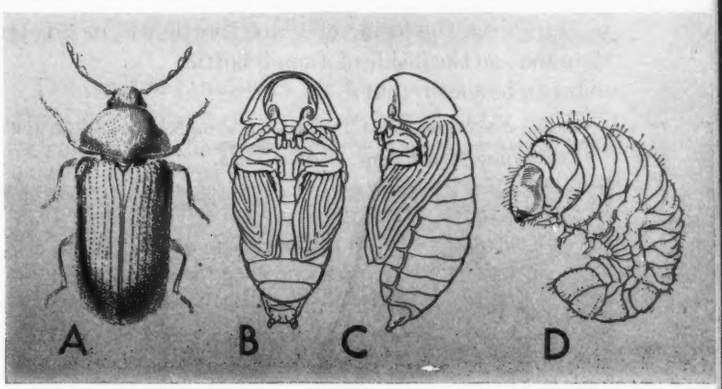
There are a number of physical conditions of packaging materials that influence penetration. Among the important ones are smoothness, thickness, surface hardness and the incorporation of an abrasive layer. Smoothness is an important quality since it makes it more difficult for an insect to obtain a footing, and thus more difficult for it to bore into the material. Thickness is important because many of the insects are small and are not capable of penetrating thick materials. Even with the larger ones, increase in thickness offers greater resistance. Surface hardness is very important because penetration by any of the stored-product pests becomes less likely with increased hardness. Insects encounter considerable difficulty in penetrating an abrasive layer and a packaging material with such a layer offers considerable resistance to penetration by insects.

Packages that are made of cloth are in no way insect resistant. With other materials proper closure is an important consideration. Because of the small size of most stored-product pests, particularly when newly hatched, the sealing of packages must be perfect if insects are to be excluded. Creases and folds should be avoided if possible, since they are favored points for penetration. Seams and roughened areas are also locations through which insects penetrate packages. The containers must be carefully machined and constructed so that all parts fit perfectly without noticeable seams, creases or other imperfections and are thereby capable of being tightly and perfectly sealed.

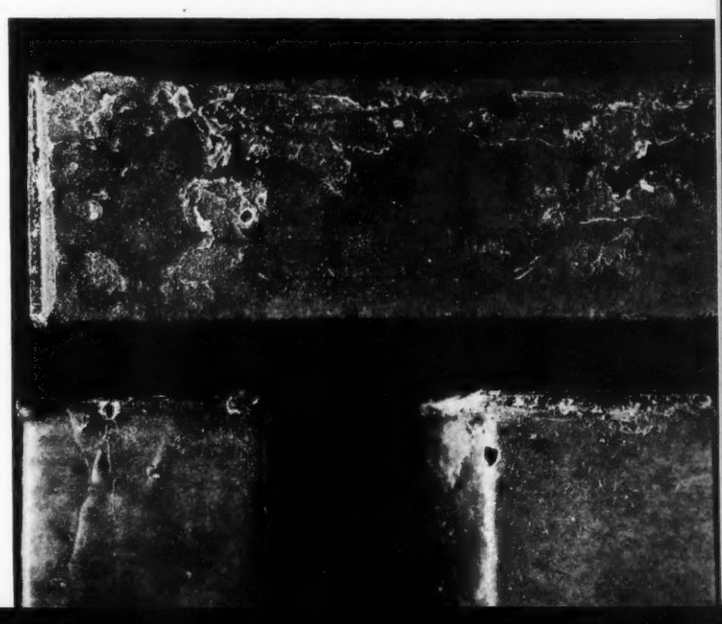
During recent years important advances have been made in the manufacture of plastics and it is very probable that some of these will be even more widely used as packaging materials. The hardness, smoothness and chemical resistance of some of these materials would indicate great resistance to insect penetration.

Many of the present-day packages offer considerable resistance to insect penetration. As mentioned in the fore part of this paper, one of the most resistant tested was a carefully machined fibreboard carton double wax-dipped in a (*Continued on page 170*)

3. **Drugstore beetle, *Stegobium paniceum* (Linn.): A, adult; B, pupa ventral view; C, pupa lateral view; D, larva. (All x 14.) It does not have a tendency to bore into packages, but readily bores out of them; its presence in packages indicates infestation of product at time it was packaged.**



4. **Penetrations made by cadelle larvae into cartons which were double wax-dipped in a thermoplastic wax. While such packages offer considerable resistance to insects, note that penetrations occured at seams, creases and rough areas of wax.**



PRESSURE* in BOTTLES

Calculation and observation yield conclusion that breakage can be avoided by carefully controlling filling height to leave expansion space equal to 6% of total volume of bottle

by DR. HENRY J. WING†

Many toilet and manicure preparations are volatile liquids which are packaged in glass bottles. From time to time reports are received of breakage of such bottles with consequent loss of the material and damage to the surrounding objects. In addition, there is always the question of injury to some person.

An investigation of the pressure which may be generated within a closed bottle and of the actual pressure set up has been made.

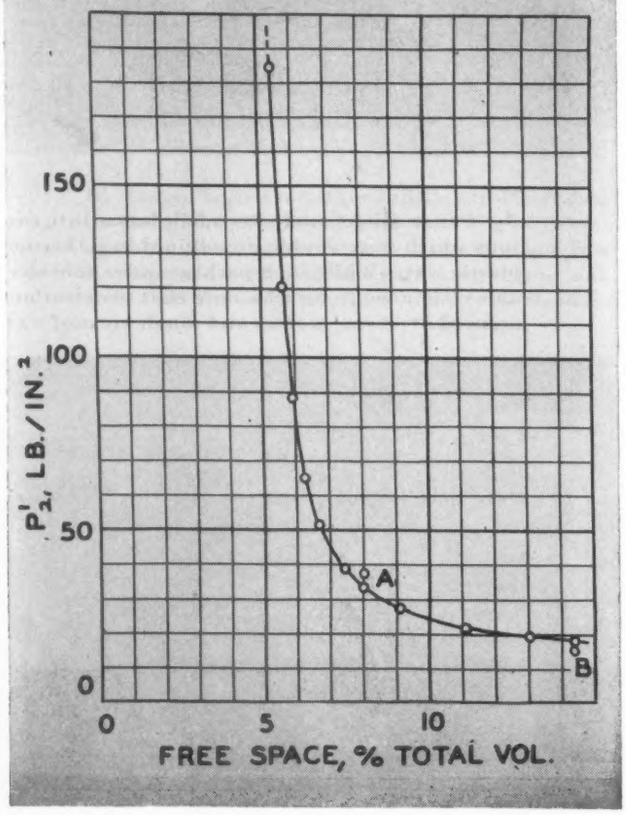
It is frequently thought that the pressure set up is larger if a larger bottle is used. It can be shown that the pressure does not depend upon the size of the bottle, but upon the ratio between the volume of liquid and volume of the free space above the liquid. Pressure is used in the sense of force per unit area. Of course, the total force on the inside of a large bottle will be greater than that on the inside of a small bottle.

It can be shown that:

* Presented before the Dec. 5, 1946, meeting of the Scientific Section of the Toilet Goods Assn., Inc.; reprinted by permission.

† The Northam Warren Corp., Stamford, Conn.

FIGURE - 1



$$P'_2 = p_2 + \frac{Q_1 T_2}{(1 - xa\,dT)T_1} - P_1$$

where

P'_2 = Increase in pressure
p_2 = Vapor pressure of liquid at T_2
P_1 = Original pressure when bottle is closed
Q_1 = Partial pressure of the air in free space at T_1
T_1 = Original temperature (Absolute)
T_2 = Final temperature (Absolute)
x = Ratio of liquid volume to free space volume
a = Coefficient of expansion of the liquid
dT = Change in temperature

The derivation of this formula is shown at the end of this paper.

This equation is based on the assumption that the air in the free space has the same solubility in the liquid as the pressure and temperature are increased as it has at the original room temperature and pressure. This is an assumption which probably is not true, but it makes possible the calculation of the pressure which may be expected.

If the bottle is filled at normal pressure with acetone at 10 deg. C. = 50 deg. F. and is then heated to 50 deg. C. = 122 deg. F., then the symbols in the equation have the following values:

p_2 = 613 mm.-v.p. acetone at 50 deg. C.
P_1 = 760 mm.
p_1 = 116 mm.-v.p. acetone at 10 deg. C.
Q_1 = $P_1 - p_1 = 760 - 116 = 644$
T_1 = 283 deg.
T_2 = 323 deg.
dT = 40
a = 0.00132

As x, the ratio of the liquid volume to free space volume, is varied the increase in pressure will vary. Table 1 shows the variation in pressure under the conditions shown above when acetone is the liquid used.

In order to determine if a closed container, a bottle, of volatile liquid would undergo the calculated pressure changes under changes of temperature, an apparatus such as that shown in Fig. 2 was built and operated.

Bulb B is the liquid container.

The volume of this portion of the apparatus when the stopcock S is closed is made constant by filling the manometer tube M with mercury. In order to be sure that this volume is always the same, the mercury is caused

TABLE I

Free Space, % Liquid	Free Space, % Total Volume	x = Liquid Volume, Free Space	P'_2, Lb./In.^{2}
5.00	4.76	20.00	Hydrostatic
5.71	5.40	17.50	184.2
5.97	5.64	16.75	120.8
6.25	5.88	16.00	89.0
6.67	6.25	15.00	65.6
7.14	6.66	14.00	51.6
8.00	7.41	12.50	39.0
8.68	7.99	11.52	33.5
10.00	9.09	10.00	27.3
12.50	11.11	8.00	21.8
15.00	13.04	6.67	19.1
16.84	14.42	5.94	18.0

These results are shown graphically in Fig. 1.

to come to the same position at the contact point *C*. This contact is indicated by the glow of a small neon light. The electrical circuit to the light is completed through the mercury and the sealed-in electrode *D*. The whole apparatus is submerged in a water bath during the test.

The volume of the bulb *B* to the contact point *C* is determined by weighing the apparatus empty and filled with water to *C*. After drying the apparatus, the amount of acetone which will fill the bulb to the desired fraction of the volume is then added. The volume added is calculated from the weight of liquid used. After filling the bulb, the long leg of the manometer is sealed on at *E*.

The whole apparatus is submerged up to *S* in a water bath which is brought to the original temperature of 10 deg. C. or 50 deg. F. Equilibrium is assumed to be established when a thermometer in the well *T* indicates 10 deg., the same as the thermometer in the bath.

The volume of the bulb is set by leaving the stopcock *S* open and adjusting the mercury so that it just touches the contact *C*.

As soon as the original equilibrium temperature of 10 deg. C. is reached, stopcock *S* is closed and the stopper fixed in place with a strong rubber band. Silicone stopcock lubricant is used on both stopcocks.

The bath is now heated to 50 deg. C.—122 deg. F. The volume of *B* is kept constant by slowly adding mercury to the long arm of the manometer. When the water bath reaches 50 deg. C., this temperature is maintained constant until the thermometer in the well *T* also reads 50 deg. C. The volume is then adjusted by carefully adjusting the height of the mercury at *C*.

The pressure in *B* is then determined by observing the difference between the height of the mercury in *E* when the temperature is 10 deg. and the height required to bring the mercury to *C* when the temperature is 50 deg. The observed difference in heights of the mercury column is calculated as pounds per square inch pressure. The values observed are shown in Table II and are shown at *A* and *B* on Fig. 1 which also shows the relation between the calculated pressures and the free space represented as percent of the total volume of the bottle.

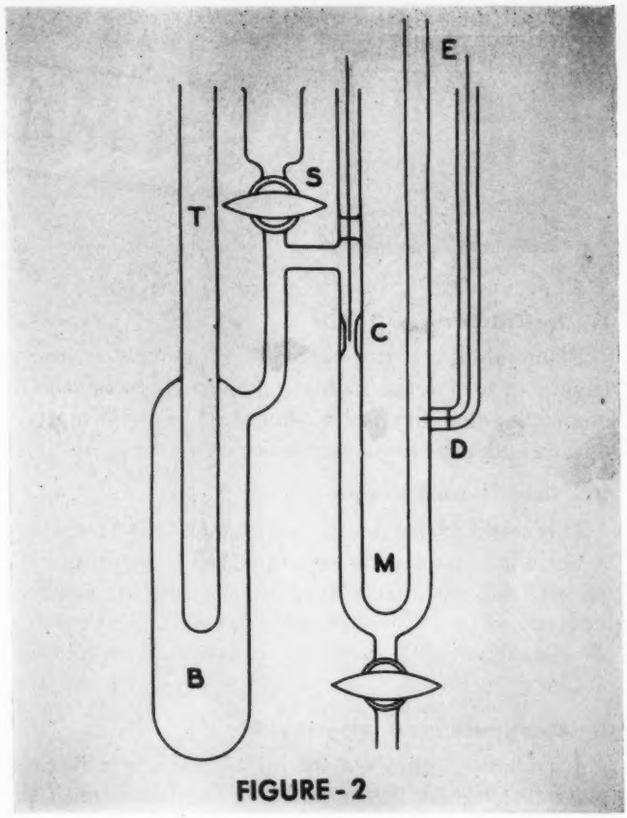


FIGURE - 2

The observed pressures are quite close to the calculated pressures, indicating the usefulness of the equation for calculating the pressures which may be set up in a closed bottle. The differences observed may be due to the use of commercial acetone which would not give exactly the values for the constants assumed when calculating Table I.

Bursting pressures of commercial bottles are quite high. The Owens-Illinois Co. has reported an average bursting pressure for one type of 1 oz. bottle to be 150 lbs./sq. in.

These calculations and experiments show that if care is exercised to see that the expansion space in a bottle is great enough to equal a little more than the probable increase in volume of the liquid itself, there is but little danger of the bottle breaking due to the usual changes in temperature.

TABLE II

Vol. Bulb	Wt. Acetone	Vol. Acetone, at 10 Deg. C.	Free Space, % Liquid	Free Space, % Total Volume	Observed Pressure, Lb./In.^{2}	Calculation
53.44	39.41	49.17	8.68	7.99	37.0	33.5
53.44	36.66	45.74	16.84	14.42	15.4	18.0

Bottle breakage, except in the case of a rare defective bottle, will only occur when the liquid can expand to fill the whole bottle. Further increase in temperature will then give rise to a very high pressure since liquids are very incompressible. This shows the necessity for careful control of the (*Continued on page 168*)

7. For flammability

1. Definition

Flammability is the degree of resistance or susceptibility of a material to burning. In this test, the index of flammability is the square inches of a material burned under the test conditions.

2. Intent and scope

This test is useful in evaluating the relative resistance to burning of packaging materials and to determine if a material will sustain combustion once burning has been induced. The test is also useful in measuring the affect of residual solvents or changes in composition on flammability.

3. Reagents and accessories

A. 1/7 to 1/8 grams of cotton batting is weighed out and rolled tightly in the palms of the hands until the ball so formed holds to a dimension of approximately 1/2-in. diameter after being moistened with 95% ethyl alcohol (denatured). The ball is soaked in the alcohol and the excess squeezed out so that the ball is just moist.

B. Ring stand.

C. Two concentric rings, 3-in. inside diameter, which clamp together holding the sample taut.

D. Graph paper with each inch square subdivided into 16 parts (i.e., cross sectional lines per 1/4 in. apart).

4. Test sample

A. Sampling—Five samples from each lot of materials are cut at least 6 in. square.

5. Test procedure

The sample is clamped rigidly between the two concentric rings (see Fig. 1). Place the freshly alcohol-moistened cotton ball in the center of the sample and ignite the ball. If the ball burns through the specimen catch it at least 12 in. below the specimen so that the heat of the flame on the under surface will not induce more burning or charring of the sample. Trace any burned out area of the sample on graph paper.

6. Calculations

Measure the area drawn on the graph paper in square inches, by counting the number of squares and dividing by the number of squares per inch (divide by 16 in the case of the specified graph paper). Average the results from the five samples.

7. Report

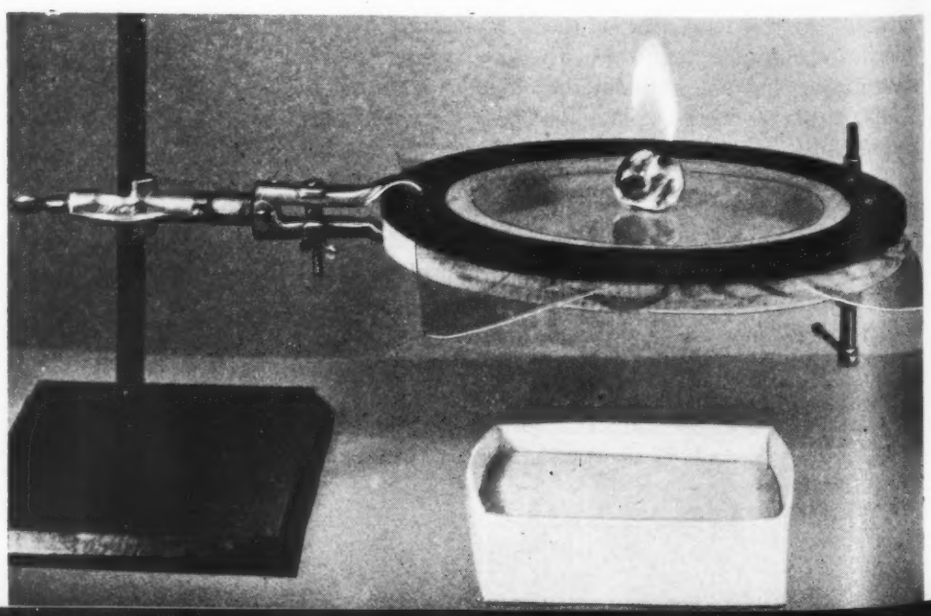
Report the average number of square inches of material burned and also whether or not the material burns freely under the conditions of the test.

8. Remarks

Materials which will burn for an area larger than five square inches cannot be considered as having any effective resistance to burning. If the material burns readily it will substantially burn out the entire sample within the area of the clamps. In this case, the square inches of area should not be reported but only the fact that the material will sustain combustion. If the material is not thermoplastic and not flammable, it is possible for the sample not to be perforated or otherwise affected during the test. Under these conditions the sample should be reported as non-flammable and non-thermoplastic.

References

T.A.P.P.I., T461 sm. A.S.T.M., D777-44t.



Alcohol-moistened cotton ball is ignited in the center of sample clamped rigidly between two concentric rings.

Music Wire

AND PROTEK-SORB* SILICA GEL

Music wire must be bright and sprightly—yet its high carbon content makes it especially susceptible to rust. Making music is just one of its uses since it has important applications in industry such as in the manufacture of vital springs.

Davison Dehydrated Packaging, using Protek-Sorb silica gel as the desiccant, has been found to be the answer to the problem of protecting this wire from the hazards of moisture damage in transit and storage.

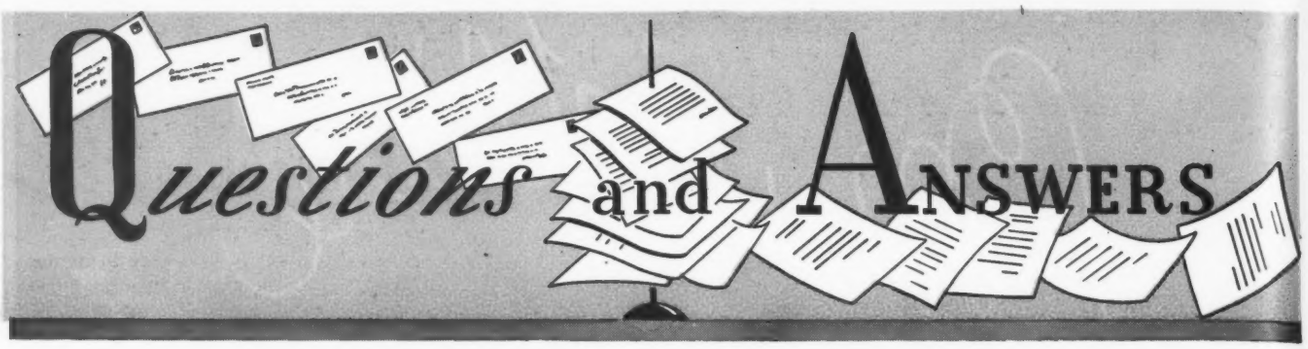
Consult Davison Representatives regarding your specific problems involving moisture damage.

D

DAVISON CHEMICAL CORPORATION

BALTIMORE 3, MARYLAND

Canadian Factory for Sales Agent for PROTEK-SORB silica gel: CANADIAN INDUSTRIES LIMITED—General Chemicals Division



This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 122 East 42nd St., New York 17, N. Y. Your name or other identification will not appear with any published answer.

WVP versus air flow tests

QUESTION: I have recently seen some test data on water-vapor permeability of asphalt laminated papers which have been treated in different ways to change their mechanical porosity. The original asphalt laminated material is perforated with a large number of extremely small openings by an electro-perforating method. The porosity of different perforated samples is several hundred percent greater than the control sample measured by air flow methods. However, the water-vapor permeability shows an increase of only about 3%. These results would seem to me to be contrary to generally accepted theories that water-vapor permeability is proportional to vapor pressure differences between the two sides of the sheet. Can you give me any suggestions or theories as to the mechanism of permeability which would account for the results I have indicated?

ANSWER: It is possible for samples to perform as you have indicated and yet the results can be explained by existing theories of water vapor and air flow. The perforations which you describe are unquestionably extremely small and are also made in a material which is relatively thick, at least as compared with the diameter of the perforations. This means that the free channels through which the air will travel in the air flow measurements and through which the water vapor will travel in the permeability test may be considered as capillaries having an appreciable length of wall and also a wall which is probably not smooth. If this is a description of the capillaries it is a relatively easy matter to correlate test results with theories.

First, the air flow measurements would show large increases for the perforated sample because the pressure used in these tests is probably at least several lbs./sq. in. and would be equivalent to at least 150 millimeters of mercury. Under these conditions of pressure differential there is sufficient flow through the capillaries to cause a very large increase in the air permeability of the sheet. However, water-vapor permeability tests are run with a pressure difference of 42 millimeters of mercury across the specimen. These low pressure differentials are not sufficient to force sufficient water vapor through the specimen to cause a large increase in the water-vapor permeability. This is particularly true in an asphalt laminated structure which has a relatively high permeability initially and which would require a large increase in water permeability to appreciably affect transmission on the perforated specimen. It is very probable that the asphaltic structure which you have described would not maintain the integrity of these perforations after extended holding at 100 deg. F. which is the usual test for water-vapor permeability. Asphalt at 100 deg. F. would flow sufficiently to close or nearly close these capillaries and this could result in a very slight change in the perforated sample's permeability which you noted.

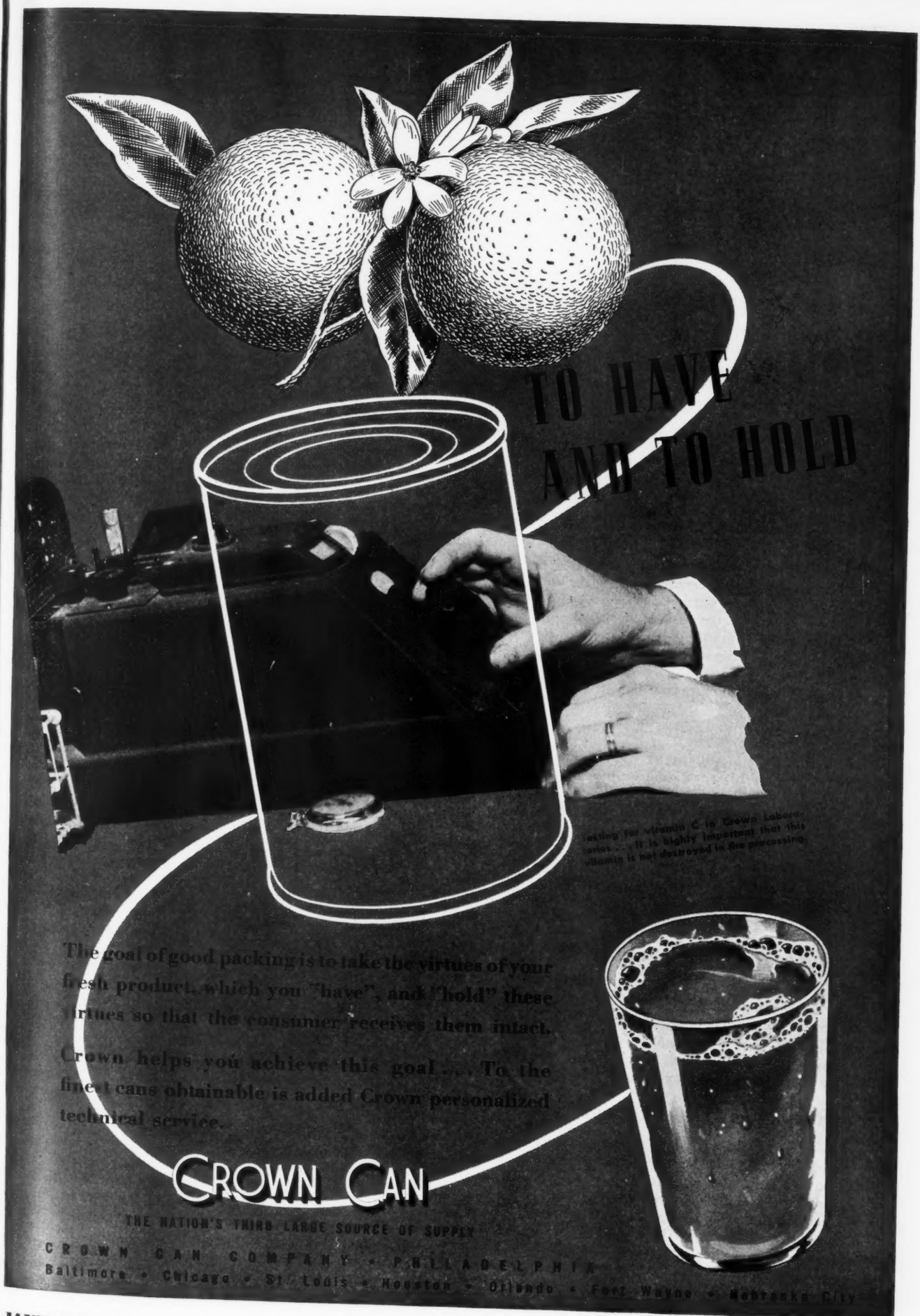
If, however, you had selected a very thin membrane of low permeability, such as Saran, polyethylene or similar films, you would find that a large number of even fine holes would definitely and appreciably increase the permeability over the unperforated sample. This increase would occur because with an extremely thin film the perforation would be more like a sharp edge orifice in a thin plate instead of a capillary and an increased water-vapor flow would be possible even with reduced pressure differentials. It is hoped that someone will be able to produce experimental evidence to substantiate some of these theories because the point which you raised is extremely interesting and would help greatly in establishing more knowledge about pressure dependency of water-vapor permeability.

Coatings for oil containers

QUESTION: We would like information on plastic or other coatings which may be in use or may have been developed for the coating of paper oil containers. For the purpose we have in mind, the containers will be subjected to a lubricating oil of combustion engines at temperatures up to 200 deg. F.

ANSWER: There are many coatings which can satisfactorily resist solution or penetration by lubricating oil at temperatures up to 200 deg. F. You can finds uch coatings by contacting lacquer manufacturers and formulators. Some of the adhesive and animal glue manufacturers also have made coatings for oil resistance.

Your choice of a coating (*Continued on page 166*)


TO HAVE AND TO HOLD
The goal of good packing is to take the virtues of your fresh product, which you "have", and "hold" these virtues so that the consumer receives them intact.
Crown helps you achieve this goal . . . To the finest cans obtainable is added Crown personalized technical service.
CROWN CAN
THE NATION'S THIRD LARGE SOURCE OF SUPPLY
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Equipment and Materials

ANOTHER CELLULOSE SEAL MACHINE

The Gisholt Machine Co., Madison, Wis., becomes the third manufacturer to announce a machine which automatically applies cellulose seals to bottles. It is said to handle 150 bottles per minute. The seals are stripped from the magazine one at a

time, adhere to a pickup drum by suction and are carried on to a rotary rubber thumb which slides the seal over to the prongs of the pickup fork, where it is expanded and stretched. After further transfer to multiple expanding fingers, the seal is positioned above the bottle, a stripper plate removes it from the expanded fingers and pushes it down over the neck of the bottle. Automatic bottle and seal control compensates for variations in bottle flow and is said to prevent sealing errors.

EXTENSION OF TRADE NAME

The Eastman Kodak Co., Rochester, N. Y., announces that henceforth the name "Kodapak" will be the trade name used for all of its types and gauges of cellulose acetate and other cellulose ester plastic materials distributed in sheet and roll form. Formerly the name applied only to the thinner gauges of the company's cellulose plastic film and sheet. Under the new name setup, the name Kodapak I will apply to all cellulose acetate plastic film and sheet from gauges 0.00088 in. through 0.020 in. Kodapak II will continue to apply to all gauges of cellulose acetate butyrate from 0.00090 in. through 0.002 in.

IMPROVED COTTON INSERTING MACHINE

Consolidated Packaging Machinery Corp., Buffalo, N. Y., announces a new series of three models of their "Kottoner" machine which automatically inserts the correct amount of cotton wadding into tablet-packed bottles at the rate of 40 to 100 bottles per minute. All the new models are equipped with variable speed drive providing instant regulation.

AIR SHIPPING CONTAINER FOR PERISHABLES

A new Fiberglas-insulated container for air shipment of perishables, made by Santi-Kraft Corp., Fort Worth, Tex., is said to maintain an 80 deg. F. temperature differential for 8 hours, without the use of a mechanical refrigerant. It is made of 3 in. of Fiberglas insulation and two plies of Vitafilm plastic, shaped into a cube, which is given an inner and outer covering of Fiberglas cloth, Neoprene and—aluminum—impregnated. The bottom of the container is strengthened with a 2-in. layer of Rubatex, which is laminated to a 1/4-in. thick plywood panel. In the top of the container are six pockets for dry ice.

MOISTUREPROOF WRAP AND LINER MATERIAL

A new wrapping material that is said to be moistureproof, moisture-vaporproof, greaseproof, moldable, non-corrosive and acid free has been developed by the Mid-States Gummed Paper Co., Chicago, for export packing and storage of metallic parts. The material, known as "Green Core Rap," is available in both rolls and sheets. Standard roll is 36 in. wide and 100 yards long.

STATIC-ELIMINATING DEVICE

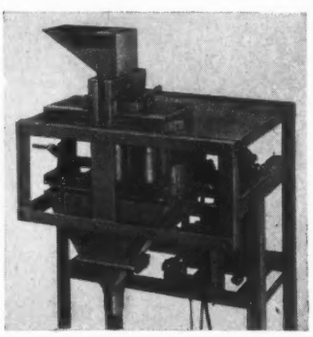
Elimination of static electricity from machinery and from moving packaging materials such as paper, cellulose acetate and other plastic films is said to be made possible with a new device, the Ionotron Static Eliminator, developed by the U. S. Radium Corp., New York. The device has no moving parts and requires no electrical connections. A continuous source of alpha radiation from a radioactive surface, in the form of a long, narrow strip, ionizes the surrounding air up to a distance of three inches from the surface. The radioactive strength of the active element is said to decrease only 50 per cent in some 1600 years.

NEW VINYLITE COATINGS

A new series of technical coatings, known as Vinylite Organosols, produced in water-clear or brilliant colors, are being manufactured by the Watson-Standard Co., Pittsburgh, Pa. Said to be highly resistant to water, grease, oil, chemicals and heat, the coatings are chemically inert, non-toxic, tasteless and may be heat-sealed. Folder available on request to manufacturer.

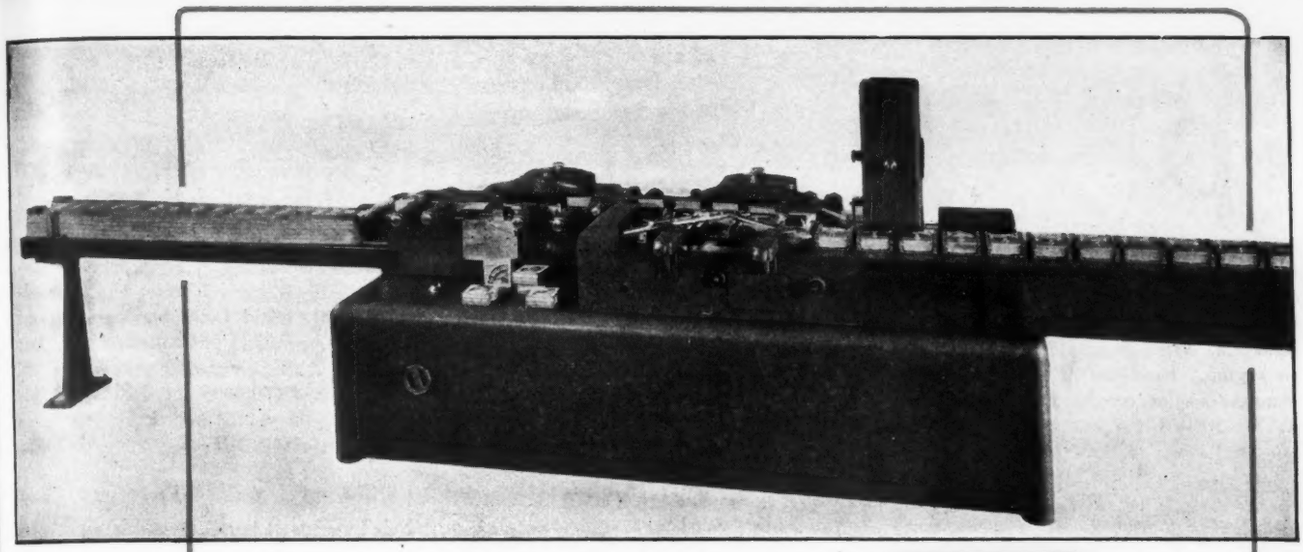
NEW VOLUMETRIC FILLERS

Triangle Package Machinery Co., Chicago, announces a new type volumetric filling machine for the packaging of free-flowing dry products such as rice, peas, beans, hard candies, nutmeats, etc., in various sizes and types of containers. Two models—the CV-4 and the CV-6—with maximum speeds of 80 and 120 discharges per minute, are available. In operation, two cups are filled, move over and empty while the other two cups are being filled; then return for refilling while the other two cups empty. Filling cups may be emptied into a common discharge hopper or into individual discharge hoppers, depending on the size of the package and the production desired.



PLASTIC JAR SEALERS PREVENT EVAPORATION

Developed specially for face cream jars, the Cellutite Sealers made by Whitehead & Hoag, Newark, N. J., compensate for the irregularities in jars, making possible a more positive seal. The sealers are made of a special formula plastic material which is odorless, tasteless, non-absorbent and impervious to moisture. They afford protection against discoloration and drying out of the product, and prevent the cream from sticking to the cap. All sealers are custom made, exactly suited to actual jar sizes of the individual customer, and the designs may be styled to conform with package individuality.



ROSS

The new CARTONING MACHINE FOR SEALED CARTONS

THIS new machine is almost identical to the standard ROSS Cartoning machine for tuck-end cartons.

Note the addition of an off-take compression unit and the substitution of glue pots for tucking units.

This ROSS machine, while designed for handling the three envelopes, as illustrated, can be adjusted to smaller or larger packages containing multiple units. (ie: bottles, collapsible tubes, candies, soaps, powder in envelopes, etc.)

All ROSS machines, automatic or semi-automatic, are functionally streamlined, engineered for precision adjustment. All parts made to close tolerances for complete interchangeability.

- **PRECISION PARTS**
- **SELF-OILING**
- **DIAL CONTROL**
- **VERSATILE ADJUSTABILITY**
- **MASTER SPEEDRANGER**

WRITE TODAY

A. H. Ross Co., Inc., Ludlow, Ky. 2

Gentlemen: Please send me without obligation, Catalog and Data on ROSS Automatic and Semi-automatic Cartoning Machines.

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COMPANY_____

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ROSS ROCKWELL

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SUBSIDIARY OF THE ROCKWELL MANUFACTURING COMPANY

PACKAGING MACHINERY · LUDLOW, KY.

Plants and People

Completion of a sales department reorganization, begun several months ago, has been announced by **Marathon Corp.**, Menasha, Wis., manufacturers of food packaging. **Russell C. Flom** was named manager of sales promotion for all products. **A. W. Stompe** was appointed general sales manager to head the six regional offices. Regional sales managers and their headquarters are: **R. A. Nash,** eastern region, New York; **E. H. Morgan,** east central, Cleveland; **Walter Evans,** southern, Atlanta; **W. Roy Welch,** central region, Chicago; **Harold Pierce,** southwestern, Kansas City; **H. W. Hicks,** western, San Francisco.

Marathon has also announced the appointment of **D. W. Davis** as director of research for all food packaging materials and packages manufactured by the firm.

Hans A. Eggerss

Hans A. Eggerss has been elected president of the **Continental Can Co., Inc.,** to succeed **Carle C. Conway,** who will remain chairman of the board and chief executive officer of the company. Mr. Eggerss joined the company in 1942 when Continental acquired **The Container Co.,** Van Wert, Ohio, of which he had been president.

Commercial production of synthetic glycerin—manufactured from propylene, chlorine and caustic soda—will get under way early in 1948, when the **Shell Chemical Corp.'s** Houston, Tex., glycerin plant is completed. Manufacturers of cellophane, films, printer's inks and paper will be among the major consumers.

Directors of **Anchor Hocking Glass Corp.,** Lancaster, Ohio, have elected **S. B. DeMerell** as vice-president and director of package sales for the container and closure division.

American Can Co. has added 16,000 sq. ft. to its research quarters with the completion of a third building at the central laboratory in Maywood, Ill. Metallurgical and fibre container research will occupy a part of the increased space.

Announcement has been made of the retirement of **John J. Lynch,** assistant to the vice-president in charge of **American Can Co.'s** central division. **F. G. Jewett** former assistant sales manager for the company's Atlantic division, has been appointed manager of sales promotion.

Dr. George J. Foss, Jr., has been appointed to the technical staff of the **White Cap Co.,** Chicago.

Dr. L. B. Sebrell

Dr. L. B. Sebrell has been appointed director of research and chemical products development at **The Goodyear Tire & Rubber Co.,** Akron, Ohio. Combining the two divisions will enable more effective utilization of facilities and personnel. **Dr. H. J. Osterhof** heads the research department and **Dr. C. W. Walton** continues as manager of the chemical products division, both of whom report to Dr. Sebrell. **Dr. A. M. Clifford, H. A. Endres** and **J. A. Merrill** have been appointed assistant managers of research, and **I. D. Patterson** has been named assistant manager of chemical product development.

Celanese Plastics Corp. plans to concentrate on the fresh produce packaging industry as a market for its cellulose acetate film in 1947, **W. Stuart Landis,** vice-president of the company, told a press conference recently. Pre-packaging, Mr. Landis said, represents a market estimated to be many times greater than the total output of all transparent films today. The company has been working in the field throughout 1946, he said, studying pre-packaging in conjunction with government and university officials.

Carbide & Carbon Chemicals Corp., New York, has announced that construction will begin in the near future on units for the manufacture of vinyl resins as an addition to its plant at Texas City, Tex. This is part of the firm's $15,000,000 general building program.

Kent S. Upham

Kent S. Upham has been appointed manager of the prepared foods division of **Owens-Illinois Glass Co.,** Toledo, Ohio. Mr. Upham has been associated with Owens - Illinois for 16 years.

Construction of a new pilot plant to further plastics research is under way at **Monsanto Chemical Co.'s** plastics division, Springfield, Mass. **Monsanto** also has announced Government approval of an estimated $4,000,000 expansion of its Monsanto, Ill., plant facilities.

Monsanto has opened a new sales office in the Keith Bldg., Cleveland, Ohio, under the supervision of **Robert H. Baugh.**

Directors of the **Muirson Label Co., Inc.,** Brooklyn, N. Y., have announced the appointment of **George R. Langlois** and **Whitney J. Wright** as vice-presidents.

The F. G. Findley Co., Milwaukee, Wis., makers of industrial adhesives, has announced the appointment of **Dr. George Batchelder** as technical director. **Jesse Matteson,** former chief chemist for the firm, is now devoting full time to servicing the trade in the field on technical problems.

Raymond R. Leonard

Raymond R. Leonard has been elected president of **Sun Tube Corp.,** Hillside, N. J., manufacturers of collapsible tubes. Mr. Leonard, formerly manager of the Hillside plant of **Bristol-Myers Co.,** of which **Sun Tube** is a wholly owned subsidiary, succeeds **Willis M. Rose,** who has retired.

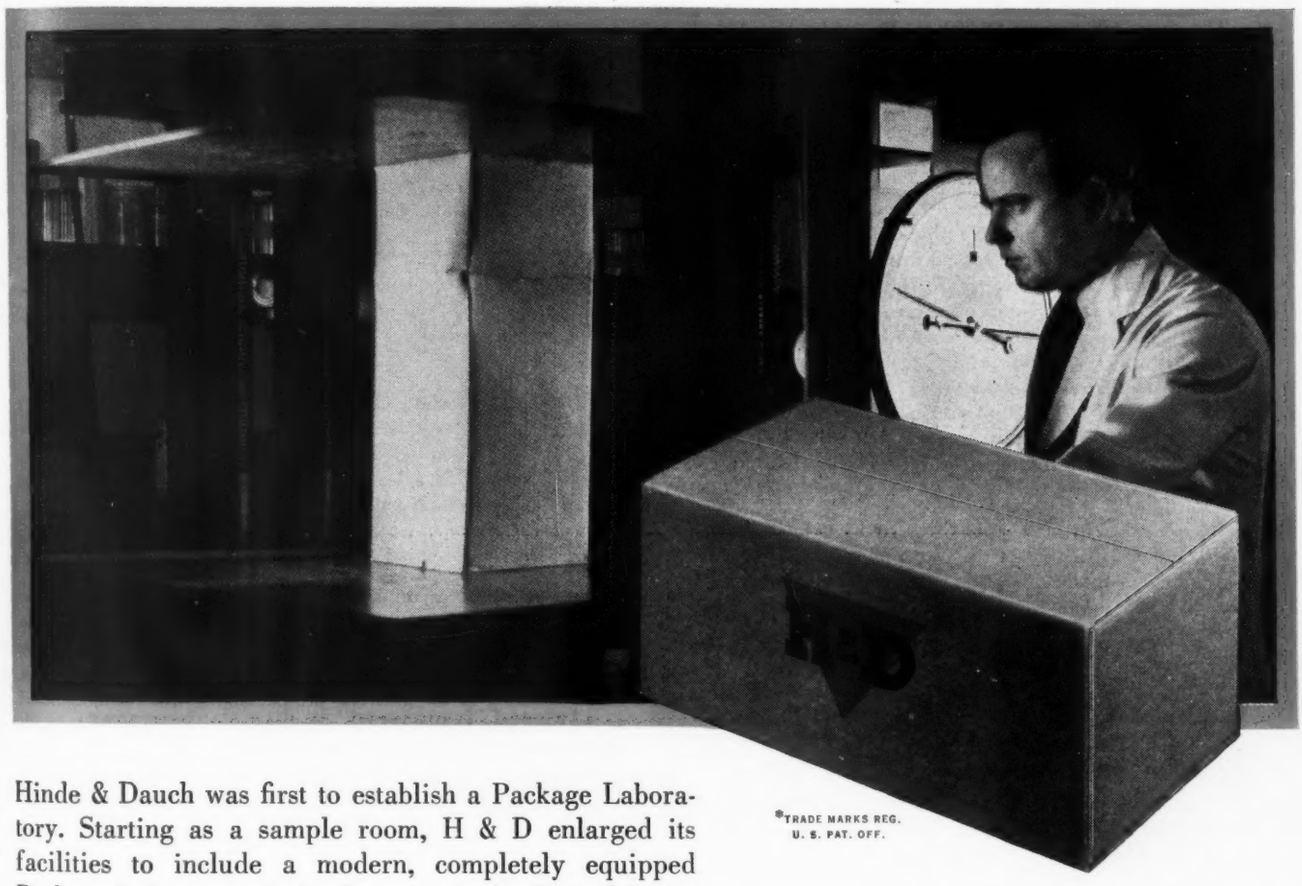
Announcement has been made of the election of **Walton D. Lynch** as president of the **National Folding Box Co., Inc.,** New Haven. Mr. Lynch joined the company in 1919 and has been vice-president since 1938. George W. Mabee has retired but will be chairman of the board.

Walter R. Speck has been appointed factory superintendent and plant engineer of the **Steiner Mfg. Co.,** plastics fabricators, New York.

Dr. Frank C. Campins, formerly associated with **National Adhesives,** is now connected with **Polymer Industries, Inc.,** 1108—30th Ave., Astoria, N. Y., makers of laminants, impregnants and coatings.

At a recent meeting of the board of directors of **The Gardner-Richardson Co.,** Middletown, Ohio, the resignation of **R. R. Richardson** as vice-president and secretary of the company was accepted. He will continue *(Continued on page 162)*

first to establish a PACKAGE LABORATORY



Hinde & Dauch was first to establish a Package Laboratory. Starting as a sample room, H & D enlarged its facilities to include a modern, completely equipped Package Laboratory in its factories in the United States and Canada. From the Package Laboratory came the LIFE PRESERVER*, the first baby chick shipping box; the first corrugated box for shipping canned foods; PRE-PAK*, the first unit package. These and many other H & D "firsts" were developed in the Package Laboratory where scientific construction and design are employed to increase packaging efficiency and reduce packaging costs. The Hinde & Dauch Paper Company, 4701 Decatur Street, Sandusky, Ohio.

*TRADE MARKS REG. U. S. PAT. OFF.

LOOK TO H&D FOR PACKAGING "firsts"

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For Your Information

A return to major emphasis in sales plans on the style and materials of the package is foreseen by **Alvin E. Dodd,** president of the **American Management Assn.,** in formally announcing the sixteenth annual **AMA Packaging Exposition** sponsored by the association to be held in Convention Hall, Philadelphia, April 8 to 11. The **AMA Conference on Packaging, Packing and Shipping** will be conducted concurrently with the exposition. The show will occupy 80,000 sq. ft., with some 150 exhibitors of machinery, equipment, supplies and services. **Clapp & Poliak, Inc.,** will act as exposition management and arrangements for attendance at the exposition and conference may be made through their office, 350 Fifth Ave., New York 1. **Alan S. Cole,** of MODERN PACKAGING, will serve as chairman of the exhibitors, advisory committee. Other members of the committee are **Frank A. Biederman, Kimberly-Clark Corp.; A. B. Clunan, Pliofilm Dept., Goodyear Tire & Rubber Co., Inc.; J. M. Cowan, The Dobeckmun Co.; Robert D. Handley, Sylvania Div., American Viscose Corp.; Roy E. Hanson, Milprint, Inc.; George Ingham, Standard-Knapp Corp.; H. H. Jones, Kalamazoo Vegetable Parchment Co.; M. P. Junkin, National Metal Edge Box Co.; L. L. McGrady, cellulose products sales division, Eastman Kodak Co ; Paul Meelfeld, The Hinde & Dauch Paper Co.; C. E. Schaeffer, packaging division, Stokes & Smith Co.; Paul Thompson, Sherman Paper Products Corp.,** and **M. A. Williamson,** *Food Industries.*

The famous **WPB Conservation Order M-81,** which for four years has controlled the uses of tin and tinplate, has been drastically amended. Unlike many other control orders, this measure listed the products which were permitted to use tinplate cans instead of those which were forbidden. The amendment removes practically all limits as to what products may use tinplate cans, but restrictions are retained tending to utilize the larger sizes of cans and prescribing the tin content. It apparently will permit the use of metal cans to greater extent for such products as beer and coffee.

The **Packaging Machinery Mfgrs. Institute** has established its own independent office in Room 736 at 342 Madison Ave., New York, following its detachment from the **Packaging Institute, Inc.** The arrangement was voted upon at the annual meeting of the machinery group, following a revision of the **Packaging Institute** by-laws to terminate the interlocking membership existing between the two groups since 1939, when the **Packaging Institute** was formed. The **Packaging Machinery Mfgrs. Institute** will continue its informational service and announcement has been made of its spring meeting to be held during the **Packaging Exposition** in Philadelphia in April.

Frederick R. Lack, vice-president of **Western Electric Co.** succeeds **Henry B. Bryans** as president of **American Standards Assn.,** with **George H. Taber, Jr.,** executive vice-president of **Sinclair Refining Co.,** acting as vice-president.

"Tenite Injection Molding" has been published by the **Tennessee Eastman Corp.,** 10 E. 40th St., New York 16, for the express use of injection molders and prospective manufacturers of molded products using the company's thermoplastics, Tenite I and Tenite II. Copies may be had from the company free of charge.

According to a postwar survey of the packaging possibilities of the jewelry and silverware industries, compiled for **The Post War Planning Committee** of the **National Paper Box Mfrs. Assn.,** the plastic box has been making some inroads on the set-up box in this industry but about 82% of all jewelry is still packaged in set-up paper boxes. Estimated number of containers used is 182,000,000.

What's doing

Jan. 19–24—**National Canners Show,** Atlantic City.
Feb. 3–5—**Canadian Fruit Wholesalers' Assn.,** Hotel Vancouver, Vancouver, B. C.
Feb. 17–21—**United Fresh Fruit & Vegetable Assn.,** Hotel New Yorker, New York.
Feb. 18–20—**Technical School for Pickle and Kraut Packers,** Michigan State College, East Lansing, Mich.
Feb. 23—**American Paper & Pulp Assn.,** annual convention, Waldorf-Astoria, New York.
Feb. 24–28—**American Society for Testing Materials,** Spring Meeting and Committee Week, Benjamin Franklin Hotel, Philadelphia.

Activities to stimulate and maintain the flow of waste paper through the Midwest are explained in an illustrated brochure recently distributed by **Frank Block & Associates,** public relations counsel, St. Louis, Mo. The booklet has been prepared from publicity and advertising published in the Muscatine, Iowa, *Journal* and shows what can be done through a planned waste-paper collection program.

Pre-packaging of produce and shipping it under refrigeration according to **A. L. Martin,** research director of the **Western Growers' Assn.** of Los Angeles, can be expected to cut down as much as 90% of spoilage encountered in bulk shipment. At a recent meeting of the growers, pre-packaging was recommended as the best way to market the products of the California-Arizona fresh produce industry. The need for keeping prices low was emphasized, with the caution that consumers could not be asked to pay for this added service. **C. B. Moore,** managing director of the association, stressed the need for increasing current prices in proportion to present high costs of labor and materials to maintain the industry on a profitable basis.

The story of developments in the manufacture of beverage bottles, from the hand-blown methods of the early 1900's to the rapid scientific machine operations used today, is portrayed in a new 16-mm. motion picture, **"It's In the Bottle,"** produced by the **Owens-Illinois Glass Co.,** Toledo, Ohio. Copies of the motion picture are available for free showings to bottlers and distributor groups on request to the company.

The far-reaching changes in the trademark law brought about by the passage of the **Lanham Act** prompted an analysis entitled **"Preparing for the New Trademark Law"** by the **Research Institute of America.** The 56-page analysis gives the highlights of the **Lanham Act,** tells what the Act means to business and outlines steps to be taken before July, the effective date of the Act. Requests for copies of the analysis should be directed to the Institute at 292 Madison Ave., New York 17.

A new **Spring-Summer Display Folio,** featuring display and display-packaging materials, with suggested applications, is being distributed by **Bulkley, Dunton & Co., Inc.** It contains a wide array of media suitable for both window display and store-wide applications. Copies of the booklet may be obtained by writing the company at 295 Madison Ave., New York.

And PINE TREE Wrinkle will help to sell your products with its "buy-appeal" beauty!

Flexible Wrinkle coatings . . . for fabrics, paper, paper-board, plastics, artificial leathers . . . are today's best bet for smart merchandising. Textures are almost unlimited, chemically controlled to exact specifications. You may have your own choice of colors and color combinations. And Flexible Wrinkle is astonishingly inexpensive. It's durable, too, stands hard usage over long periods. Call in your favorite supplier of finishing materials, or write us for further information on versatile Flexible Wrinkle coatings . . . either synthetic rubber-base, or resin emulsion-base.

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for our bi-monthly publication "New Wrinkles in Finishing." It's free; it illustrates a variety of interesting Wrinkle applications; and it lists the nearly 200 licensed suppliers of Wrinkle coatings.

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***WRINKLE**—the one-coat finish for metal sheets, castings, weldments. It conceals defects.*
***FLEXIBLE WRINKLE** for coating fabrics, paper, paper-board, plastics and artificial leathers.*

U.S. patents digest

edited by H. A. Levey

This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps are not accepted.

Heavy-duty Paper Shipping Carton Having Interlocking End Closure, F. R. Buhrmaster (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,410,148 Oct. 29. A carton comprising a tubular body and a closure for an open end thereof, said body having an external peripheral shoulder thereon adjacent to said end thereof, and said closure having a rim portion that surrounds said end of said body and has an internal shoulder disposed in abutting relation to the external shoulder thereof, and means for holding rim and securing said rebent portions to closure flaps for retaining the band.

Display Case for Wrist Watches and the Like, W. Helbein, New York, N. Y. U. S. 2,410,161, Oct. 29. A display case for wrist watches, comprising a member about which a wrist watch and band may be mounted and having outwardly extending flanges at its end portions extending outwards of said wrist watch and band, and shell-like end covers slidably mounted on said flanges.

Apparatus for Decrating Eggs, W. G. Howard, Indianapolis, Ind. U. S. 2,410,163. Means for decrating eggs, comprising a vertical axis turntable, two parallel pairs of vertical plates journalled on said table on horizontal axes normal to and medially of said plates with the plates of each pair spaced apart a distance slightly greater than one horizontal dimension of a standard egg crate, each plate being provided with two L-shaped supplements with their vertical-arm extremities hinged to opposite edges of a plate and their horizontal arms directed toward a companion plate and also provided with a lip at one edge normal to the hinged axes and projecting toward a companion plate.

Carboy and Method of Assembling, J. W. Nygren (to United States Rubber Co., New York, N. Y.). U. S. 2,410,179, Oct. 29. In a carboy construction, the combination of a bottle having upper and lower shoulders, a structure encasing the bottle and including corner posts, said corner posts having transverse notches opposite to its upper and lower shoulders.

Cigarette Container, W. E. Celestin, New York, N. Y. U. S. 2,410,200, Oct. 29. A cigarette container, comprising a bendable band conformable to a portion of the human body, means for attaching the two ends of the band together, and waterproof pockets therein for holding cigarettes transversely of said band, said pockets being closed by end walls formed by marginal scallops bent up from said band.

Casing, A. J. Freeman (to Glenn S. Noble, Chicago, Ill.). U. S. 2,410,206, Oct. 29. A casing for food products, formed of a strip of parchmentized paper having its edges sewn together and having a longitudinal internal tubular welt which is flattened close to the inner wall of the casing, and so constructed that each edge of the strip is folded back upon itself.

Paper Bag Having a Burlap Sampling Zone, P. A. Frixione, Buenos Aires, Argentina. U. S. 2,410,282, Oct. 29. In combination with a bag having walls made of laminations of paper and provided along its top and bottom edges with reinforcements, a strip of burlap extending on the outside of the bag from the reinforcement at the top edge to the reinforcement at the bottom edge.

Box End-Folding Machine, A. H. Rines, J. Hardy, & D. J. O'Keefe (to Hytron Corp., a corporation of Massachusetts). U. S. 2,410,393, Oct. 29. In a box end-folding machine, a support for the box, box end engaging means comprising a pair of movable members, means for initially moving said members together for movement of the box end and subsequently stopping one of said members while the other member continues to move the box end into final position.

Sifter Package for Pharmaceuticals, M. R. Fields (to Abbott Laboratories, a corporation of Illinois). U. S. 2,410,438, Nov. 5. A package comprising an inner container, an outer envelope enclosing said inner container, said envelope having a pair of walls and a closure flap extending from the upper end of one of said walls, said flap being folded over the outside of the other wall to close the envelope, upper end being provided with weakened lines of severance, the flap of which being adhesively secured to a removable corner, which when open provides easy access to inner container.

Foldable Box, G. J. Evans, Buffalo, N. Y. U. S. 2,410,486, Nov. 5. Partitioning means for dividing the space in a container into a plurality of cells comprising a sheet of material which is cut to form a plurality of horizontal transverse bottom sections and a plurality of vertical transverse walls each of which is bent upwardly from a transverse edge of one of said horizontal bottom sections.

Box Dumping Machine, F. J. McMichael, Orlando, Fla. U. S. 2,410,515, Nov. 5. In a box dumping machine, the combination of a cradle pivoted medially of its length but movable by gravity to return automatically from substantially horizontal dumping position to substantial vertical loading position to receive a stack of boxes thereon, and equipped with motor for rocking the cradle to dumping position.

Leakproof Powder Case, A. S. Leitner, Los Angeles, Calif. U. S. 2,410,585, Nov. 5. In a leakproof powder case, two circular members having each a peripheral edge portion connected to that of the other by a hinge, and a sealing ring permanently mounted in one of the grooves to form a seal when device is closed.

Mechanism for Partially Closing Containers, C. Z. Monroe (to The American Paper Bottle Co., Toledo, Ohio). U. S. 2,410,587, Nov. 5. Apparatus for partially folding the foldable end closures of paper containers comprising, in combination, means for supporting a container with its foldable end in a predetermined position to be acted upon, two container end folding elements, and mechanism for moving said elements into position to act upon the foldable end of a container so supported, causing said elements to move relatively to each other to effect the folding of the container.

Fibreboard Cushioning Filler for Cartons, W. E. Turner (to O. B. Andrews Co., Chattanooga, Tenn.). U. S. 2,410,591, Nov. 5. A filler for shipping cases comprising a blank of fibreboard divided by transverse score lines into sections, one end section having spaced parallel slits extending longitudinally of the blank from a point adjacent its free edge to a point within the next adjacent section to define a parallel foldable at each end and intermediate its length.

Container and Display Box, W. T. Wayne (to Scripto Manufacturing Co., Atlanta, Ga.). U. S. 2,410,615, Nov. 5. In a storage and display box, a pair of rectangular boxes of greater depth than width; one of the maximum area sides of one box formed integral with and hinged to the edge of the adjacent like side of the remaining box whereby in display position, the two boxes stand side by side.

Container and Method of Making It, V. A. Rayburn (to Western Electric Co., Inc., New York, N. Y.). U. S. 2,410,681, Nov. 5. A container for retaining a corrosive electrolyte, which comprises a metal tank, a solid thermoplastic lining material positioned within the tank to prevent contact between the tank and the electrolyte.

Match and Cigarette Container, G. P. Rufle, Canton, Ohio. U. S. 2,410,684, Nov. 5. A cigarette container formed from a single blank, said blank being divided to provide a front wall, a rear wall, an intermediate side wall between the front wall and rear wall, a second intermediate side wall at the outer edge of the front wall, a side flap at the outer edge of the rear wall for attachment to said last named intermediate wall to maintain the container assembly, the front being provided with short flap at the re-entrant cutout, for which there is a matchbook attached to said short flap.

Machine for Sealing Bags, E. E. Messmer (to Amsco Packaging Machinery, Inc., Long Island City, N. Y.). U. S. 2,410,834, Nov. 12. A machine for sealing the open mouth of a bag, said machine comprising means for sealing the bag, means spaced from said sealing means for removing air from the bag, and a pair of endless belts having parallel reaches opposed to each other and extending between said air removing means and said bag sealing means, and means for urging said reaches together to compress between them the mouth of the bag being transferred.

Dispensing Container, C. S. Beardsley (to Miles Laboratories, Inc., Elkhart, Ind.). U. S. 2,410,923, Nov. 12. In a dispensing container, a tubular enclosing member of substantially rectangular cross-section comprising side and top and bottom walls, an open top tray for articles to be dispensed slidably mounted in said enclosing member and comprising a bottom wall and side and end walls.

Container, H. F. Christner, F. A. Lobley and C. F. Miles (to Ames Company, Inc., Elkhart, Ind.). U. S. 2,410,928, Nov. 12. In a container having a base member, said

Bringing more sun to shut-ins . . .

HARD to believe that the young nurse is adjusting a window glazed with a *packaging material*, isn't it?

Yet that's just what she's doing . . . Double layers of Kodapak II, thin-gauge, acetate butyrate sheeting, laminated with coarse-mesh cotton scrim, produce a lightweight, long-lasting, weather-resistant type of material that transmits a wide range of the sun's health-giving ultraviolet rays.

Result: a glazing specially adapted for use in hospitals, in homes and offices, and on farms.

Choice of Kodapak II for this purpose is proof again of this product's great versatility . . . of the wide range and variety of its uses.

Although the current supply of Kodapak and Eastman Acetate Sheet is not sufficient to meet the steadily increasing demand, the Kodak Transparent Packaging Laboratory in Rochester is available to demonstrate fabricating methods.

Cellulose Products Division
Eastman Kodak Company, Rochester 4, N. Y.

ODAPAK AND EASTMAN ACETATE SHEET

Attract . . . Protect . . . Sell

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base member being open at one end and comprising front and rear walls, a pair of side walls, and a bottom wall lying in a plane extending transversely of said side, front and rear walls substantially at right angles thereto, and equipped with a pair of partitions extending inwardly of each of the side walls in alignment with the first standard to define a compartment between the same and said rear wall.

Container Closure, R. N. Wallach (to American Viscose Corp., Wilmington, Del.). U. S. 2,411,012, Nov. 12. A liquid-container closure having therein a sealing gasket comprising a mixture of artificial fibres, said fibres comprising fibres which will swell in the liquid held in the container and other fibres which are inert to said liquid.

Web-Feeding Device, C. E. Wyrick (to The Ergy Register Co., Dayton, Ohio). U. S. 2,411,075, Nov 12. A web feed roll mechanism including in combination: a feed roll having shaft means for supporting the same, a web aligning roll laterally spaced from said feed roll and having shaft means for supporting the same, a pressure roll having a supporting arm adjacent each end thereof, said arms being pivotally connected to said aligning roll shaft means.

Cup-Forming Machine, E. Conti (to Herz Manufacturing Corp., a corporation of New York). U. S. 2,411,082, Nov. 12. The method of forming paper cups which includes the steps of: feeding a blank between a primary male die assembly and a female die assembly, forming portions of the blank between said primary male die assembly and said female die assembly, shifting the partly formed blank in said female die assembly beneath a secondary male die assembly, shifting the partly formed blank in said female die assembly beneath, completing formation of blank.

Metal Framed Wood Container, J. E. Wilson, Detroit, Mich., U. S. 2,411,121, Nov. 12. As a new article of manufacture, a container comprising a box-like frame structure in the form of a rectangular angle bar lower frame having an inwardly extending flange and in addition an upwardly extending flange with a pair of outstruck parallel ribs extending thereabout, having a plurality of angular bar uprights adapted to support the frames in spaced relation.

Carton Blank, R. A. Lambert (to Brooks Bank Note Co., Springfield, Mass.). U. S. 2,411,134, Nov. 12. A carton blank formed and hinged for folding into a receptacle having a cover and separate cover retaining means comprising in combination, relatively hinged bottom wall and front, back and side wall members, a cover hinged to one of said wall members to close the receptacle when the wall members are in set-up relation.

Method of Making Knocked-Down Boxes and Improved Cartridge Containers, R. M. Bergstein, Cincinnati, Ohio. U. S. 2,411,144, Nov. 19. The method of making knocked-down boxes from cut and creased blanks having a front wall, with side walls having medial lines of fold therein articulated thereto, glue flaps articulated to said side walls, a bottom wall with a medial line of fold therein, a back wall having an inner supporting panel having foldedly connected thereto a partition panel with a medial fold line therein and a glue flap articulated to said partition panel which includes moving said blanks along in a part parallel to the medial fold line in the bottom wall.

Closure for Sheet-Metal Container Openings, H. W. Dodson (to United States Steel Barrel Co., Philadelphia, Pa.). U. S. 2,411,149, Nov. 19. In a sheet metal container, a generally cylindrical bung-flange drawn integrally from said container and defining an opening in a wall thereof, said bung-flange extending outwardly from said wall and providing a gasket seat at its outer end, said bung-flange being helically corrugated to provide an internal screw-thread and an external screw-thread thereon.

Bottle Carrier, J. F. De Villard (to Charles W. Stiefel, Jr., Chicago, Ill.). U. S. 2,411,195, Nov. 19. In a bottle carrier formed from a blank made from cardboard or like material to afford, when erected, a bottom wall, side walls joined along fold lines to opposite side edges of said bottom wall, bottle receiving sections joined along fold lines to the upper edges of the respective side walls, a handle section joined along fold lines to the other edges of the two bottle receiving sections so as to project upwardly therefrom.

Automatic Gas Pressure Relief Bottle Cap, O. N. Leutz, Port Clinton, Ohio. U. S. 2,411,216, Nov. 19. A wine bottle having a neck, a cork fitting tightly in said neck and formed with a longitudinal bore, a cap fitting about said neck and having an upper portion projecting upwardly from the neck and formed with a vented head at its upper end, an open-ended tube extending longitudinally through the bore of said cork and projecting beyond inner and outer ends of the cork, a packing disc fitting tightly about the projecting outer end portion of said tube and bearing against the outer end of said cork, a coil spring in said tube, a valve disc fitting against the outer end of said tube and the outer face of the packing and having an eye which extends into the said tube.

Machine for Closing Containers, M. M. Sedwick (to Continental Can Co., Inc., New York, N. Y.). U. S. 2,411,232, Nov. 19. A closing machine comprising a bell, a capping head in said bell having a cap support, means for moving the capping head relative to said bell for placing the cap support at the mouth of the bell to receive the cap, a container support beneath the bell, and means for moving container support relative to the said bell for position at the mouth of the said container.

Apparatus and Method for Filling Gas Storage Cylinders, G. H. Smith (to the Linde Air Products Co., a corporation of Ohio). U. S. 2,411,235, Nov. 19. Apparatus for filling gas storage cylinders to a desired final pressure comprising, in combination, a cylinder rack; cylinder filling means including means for connecting said rack to a source of gas material under pressure which is greater than the desired cylinder pressure.

Collapsible Tube, B. Bogoslowsky, Jackson Heights, N. Y. U. S. 2,411,244, Nov. 19. The method of making a collapsible tube from sheet material which comprises shaping a tubular blank of such material to provide an embryo tube having a shoulder and an elongated tubular neck integral with the tubular body and consisting of folded material, and subjecting the entire end surface of said elongated tubular neck to longitudinal pressure to compress and compact the neck material and to shorten and thicken the same to provide a finished neck of substantial strength and rigidity.

Match Holder and Windshield, A. E. Andon, Pelham, N. Y. U. S. 2,411,314, Nov. 19. In a match holder, the combination of an open top match container within said holder, two side pockets and a front pocket in said match holder at the side and front walls of the container, respectively, a windshield hingedly secured to the back edge of said container, two foldable fan-like sides each having one end fastened in one of said side pockets and the opposite ends being secured to said windshield.

Bottle Cap, T. J. Van Alstyne, Portland, Ore. U. S. 2,411,349, Nov. 19. A paper milk bottle cap consisted of two plies of paper forming a circular disc, one of said plies having a semi-circular perforation formed therein and having a plurality of pointed perforations extending along the diameter of said semi-circular perforation to form a hinge line therefor.

Display Folder, A. B. Dow, Midland, Mich. U. S. 2,411,368, Nov. 19. A folder of the book-match type comprising two superposed continuous strips folded transversely adjacent the center thereof to form a back member and a cover member, the free end of the cover being the insert end and the free end of the back member being folded back upon itself to form a bottom return fold which receives the insert end of the folder.

Display and Dispensing Package for Tablets, A. G. Sherman (to Sherman Laboratories, Detroit, Mich.). U. S. 2,411,471, Nov. 19. A display package comprising a plurality of members formed of sheet material arranged side by side and having perforations, registered in the several members, for receiving products, a flexible wrapper extended around said members and having at least one of its ends open.

Dial Head Unit for Weighing and Recording Scales, O. S. Carliss (to The Yale & Towne Manufacturing Co., Stamford, Conn.). U. S. 2,411,521, Nov. 26. In a weighing scale a light duty movement multiplying transmission for translating the relatively small displacements of a weighable load counterbalancing mechanism into respectively greater corresponding displacements of a weight indicator embodying the combination with said load counterbalancing mechanism.

Container Wall, W. O. Manor (to Consolidated Paper Co., Monroe, Mich.). U. S. 2,411,580, Nov. 26. A container wall comprising an outer layer of fibrous material and an inner dual coating layer impermeable to asphaltum, bonded to but severable from said fibrous layer, said inner dual coating layer comprising a first major body undercoating of water-dispersed clay and sufficient adhesive that this first undercoating of material may isolate the second coating from the said wall.

Molded Carton Construction, R. Guyer & R. M. Dunning (to Waldorf Paper Products Co., St. Paul, Minn.). U. S. 2,411,622, Nov. 26. A sealed package comprising a series of panels connected together to enclose completely the package contents, the material composing the panels including at least in the area of the trihedral corners at one end of the carton a thermoplastic material, each said trihedral corner having its apex compressed in predetermined beveled or rounded form, said thermoplastic material operating to hold said corners permanently in said predetermined form.

FRUITS IN GLASS A 2 to 1 CHOICE!

Housewives prefer a container that allows inspection before purchase!

Their emphatic vote for fruits in glass is but one example of a general 2 to 1 (or better) preference for foods packed in glass as established in national surveys of fruits and many more representative products* by a well-known public opinion analyst.**

The trend is to glass for modern packaging because of these basic glass container advantages:

VISIBILITY:

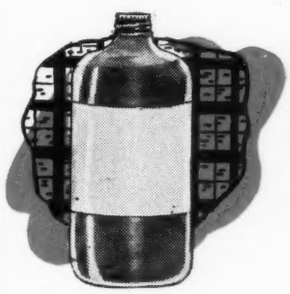
They see what they want—want what they see when it's packed in a glass container. Glass shows size, style, color and the amount. Goodness sells itself.

PROTECTION:

Food in glass keeps fresh, flavorful . . . tastes good. 64.7% of young mothers interviewed prefer glass-packed baby food—they trust the safety of glass.

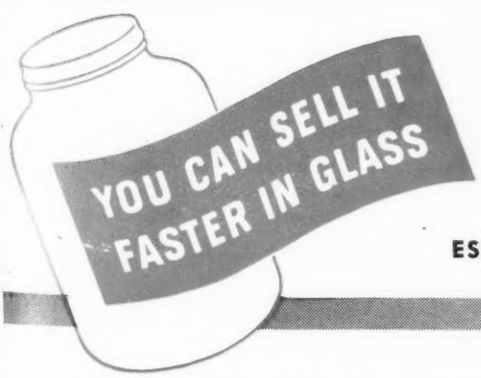
ATTRACTIVENESS:

Glass-bright displays are eye-inspiring, invite their purchase. These modern containers add color and a spick-and-span sparkle to their pantry shelves.



CONVENIENCE:

A glass container is easy to handle, to keep clean . . . shows when to buy more. Leftover portions can be stored in the original container. No waste!



The popularity of glass containers is growing . . . growing because their many advantages are basic. You sell more—need less selling time with products packed in glass—in Duraglas Containers!

**Average is based on eight key classifications: pears, peaches, fruit salad and cocktail, baby food, coffee, salad or cooking oil, beets, food-beverages.*

***Name supplied on request.*

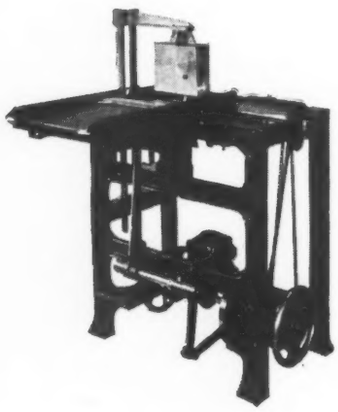
ESPECIALLY IN Duraglas CONTAINERS

OWENS-ILLINOIS GLASS COMPANY · TOLEDO 1, OHIO · *Branches in Principal Cities*

MORE PRODUCTION
In Less Time
With Less Effort!

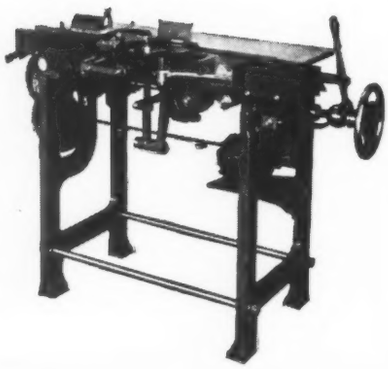
If you are looking for new sources of labor saving and cost cutting in your carton packaging operations, investigate the many advantages of PETERS economical machines to set up and close cartons. These machines are showing big savings in hand labor, added production and increased profit for users everywhere.

Send us samples of the cartons you are now using. We will gladly make recommendations to suit your requirements.



This PETERS JUNIOR CARTON FORMING & LINING MACHINE sets up 35–40 cartons per minute, requiring only one operator. After the cartons are set up, they drop onto a conveyor where they are carried to be filled. Machine can be made adjustable to handle several size cartons.

This PETERS JUNIOR CARTON FOLDING & CLOSING MACHINE closes 35–40 cartons per minute, requiring no operator. After cartons are filled, they enter machine on conveyor and are automatically closed. Can also be made to handle several different size cartons.



PETERS MACHINERY COMPANY
GENERAL OFFICE AND FACTORY
4700 RAVENSWOOD AVE., CHICAGO 40, ILL.

Plants and people

[*Continued from page* **154**] to serve on the board of directors. **Colin Gardner, III,** was elected to fill the office of secretary and **W. W. McIntire** was named director of purchases, both posts formerly held by **R. R. Richardson. R. O. Brosius** was elected to the office of assistant secretary.

Directors of the **Riegel Paper Corp.,** New York, have elected **Robert H. Evans** assistant treasurer and assistant secretary. Mr. Evans was formerly chief of the Pulp Allocation Office of the War Production Board.

Howard P. Claussen, vice-president and director of the cotton department of **Bemis Bro. Bag Co.,** Boston, has been elected a vice-president of the **Cotton Textile Institute.**

Michael S. Shenk has been appointed chief chemist in charge of research and production for **Peerless Adhesives Co., Chicago.**

Pyroxylin Products, Inc., has announced the opening of an Eastern branch and the removal of its Eastern office to Russell Rd., Paoli, Pa. **Paul H. Yoder** continues as Eastern manager.

Emory W. Worthington has been appointed chief engineer of the **Champlain Co.,** Bloomfield, N. J., manufacturers of rotogravure and letterpress printing equipment.

Traver Corp., Chicago, makers of transparent bags, have established Eastern offices in New York and Philadelphia.

John Chalfant, export manager of the **Package Machinery Co.,** Springfield, Mass., has left on an extended trip through the Caribbean countries to assist the company's Latin-American representatives on sales development and training programs.

Central States Paper & Bag Co., Inc., are now located at their new address, 5221 Natural Bridge Rd., St. Louis 15, Mo.

The Arabol Mfg. Co., New York, adhesives manufacturers, recently presented **Raymond L. Grant,** assistant treasurer, with an engraved gold watch commemorating his 25 years of service with the firm.

Sun Chemical Corp., New York, has announced the appointment of **Walter Huber** as vice-president of the **General Printing Ink Div.**

Armstrong Cork Co., Lancaster, Pa., have announced the following personnel changes in the glass and closure division district offices: **Byron T. Petry** has joined the Chicago office; **William R. Kiner** has been transferred to New York, and **John Seele, Jr.,** is now in New York.

Thatcher Glass Mfg. Co., Inc., Elmira, N. Y., have halted construction of the major portion of the new plant being built adjacent to their present plant at Olean, N. Y. Construction is continuing only on a small portion of the project, including a warehouse building.

Ellis J. Keehn has been appointed account executive for the design and styling department of **Barnes & Reinecke, Inc.,** Chicago, industrial designers.

William R. Janney has been elected vice president of the **National Can Corp.** and will continue as general sales manager of the general line sales division.

Leslie W. Gould has been named sales manager of the mill division of **Gaylord Container Corp.,** St. Louis, Mo., to succeed **Otto P. Carter,** who died recently. **M. L. Wuescher** will serve as Mr. Gould's assistant.

Otto P. Carter, sales manager of **Gaylord Container Corp.'s** mill division, died recently. He had been with Gaylord more than 25 years.

John H. Oxley, president of **John H. Oxley Co.,** Watertown, Mass., plastic specialties, died suddenly recently in New York.

RESEARCH

knows no "good enough"

The purpose of a research staff is to go beyond "good enough" to *the best.* To open new markets, to visualize new ends, to find better means. Industrial research that does not constantly improve the products upon which it works, does not expand markets and increase quality, is not serving its true purpose.

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In the case of laminating adhesives, for instance, the Dewey and Almy program of "related research" can bring you all the advances and improvements of integrated and highly competent research. Not as competitors of your own staff of chemists, but as a supplementary staff to free yours for work in the important field of proper control of papers you use, our chemists can provide you with laminants that are more than "good enough", that are so good that your market can widen and your sales increase. Our staff, sharing knowledge and experience in related fields, can contribute to better solutions of your problems, increasing improvements in your laminated papers. Why not decide now to adopt the program you will require later, and keep your products always ahead of the field?

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Darex *Laminating* Adhesives

A Product of DEWEY AND ALMY CHEMICAL COMPANY
CAMBRIDGE 40, MASSACHUSETTS ★

Your sales job is made easier when your product is "clothed" in sparkling, crystal-clear LUSTEROID.

These modern plastic vials and tubes are actually small showcases that display your product while protecting it in transit, over the counter and in use.

Remarkably light in weight, LUSTEROID containers are strong, rigid and unbreakable. Their printability saves on labeling. Their wide variety of colors—clear or opaque—makes them a most effective merchandising medium.

LUSTEROID comes in standard diameters of 1/4" to 1-1/4" and lengths to 6". Cork, slip-on or screw-cap closures.

Write for full details today.

LUSTEROID CONTAINER CO., Inc.
Formerly Lusteroid Division of Sillcocks-Miller Company

Office and Factory
10 W. PARKER AVENUE, MAPLEWOOD, N. J.
MAILING ADDRESS: SOUTH ORANGE, N. J.

23,000 items

(*Continued from page 107*) displayed? (If they were to be bin items spread out on the counter, certain size and space limitations would have to be adhered to in designing the packages. If they were shelf items, the problems were different.

Fig. 9 illustrates an adaptation of the men's and boys' packaging from the wholesale set-up to a retail package. This is the package for the consumer to take home. The green for men's wear, the wreath and tan paper for textiles have been used here as well, so that there is a complete identity between the wholesale and retail packaging. But there are important variations (compare with Fig. 2). All content information has been removed from the retail package so far as stock number, etc., are concerned. Instead of the trademark, stylized Greek figures have been substituted on the men's package, and the whistling boy and his dog, with the figures of "sport" and "chivalry" in the background have been used on the boys' items.

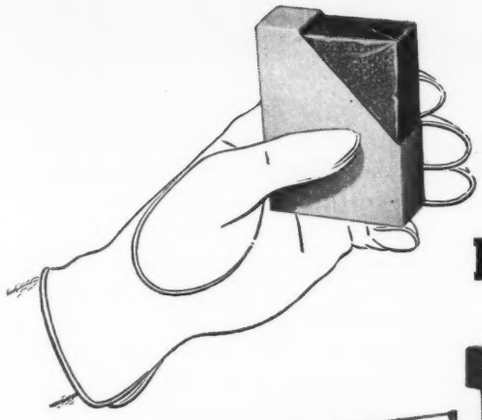
In this article I have tried to give some idea of the problems faced by the world's largest distributor of general merchandise and some of the solutions. The ways in which the packaging is purchased, how it is used, the methods of insuring quality control in brand-name use, the place of the inspection units in the branches, the writing of packaging specifications—all these form a whole story in themselves.

Line after line in Butler Bros. is receiving analysis for proper packaging. It is a long job which will not be completed over night. Each step toward its completion gives the independent merchant a better-looking store, makes his store a better place in which to shop and helps increase his volume by establishing his brand names in the consumer's mind. The successful completion of the job will be of inestimable value to the independent merchant and to Butler Bros.

Labeling solvents

For safety, says the Safety Research Institute, it is important that every container of organic solvents, of whatever size, carry a label duplicating the information on the original drum. When containers are refilled labels should be compared to prevent refilling with the wrong solvent. Supervision by responsible plant personnel is advisable to make certain these rules are carried out.

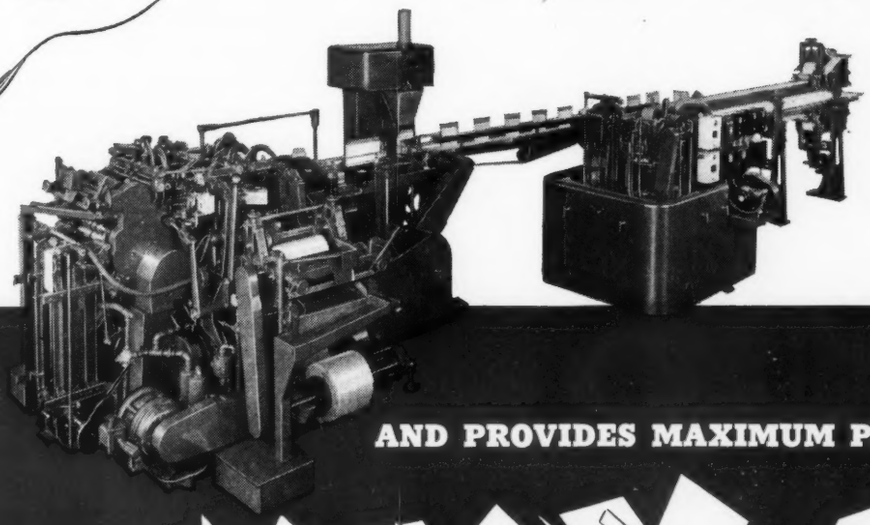
Manufacturers of solvents, to prevent misuse of their products, use warning labels indicating measures needed to assure safety. These labels have been developed by the Manufacturing Chemists Assn. and are published in its Manual L-2. Often drums are kept in a centrally located spot on arrival at plant from which smaller containers are filled. These should be properly labeled to avoid fire hazards and accidents to persons.



a package with

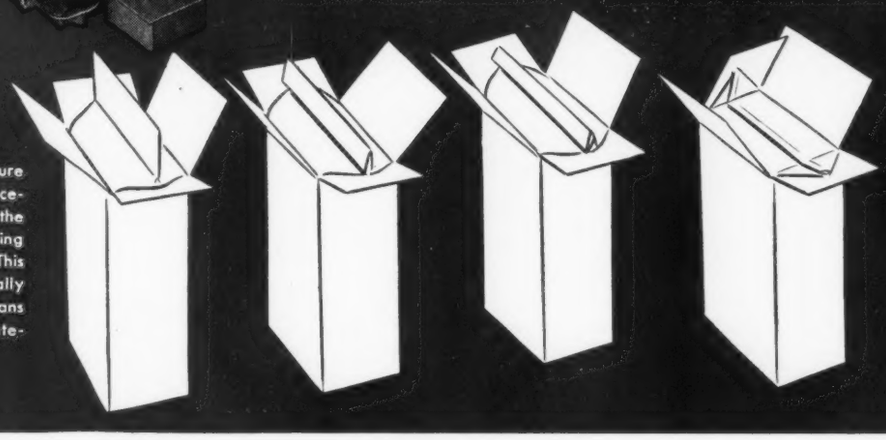
a LINER that fits

like a hand in a glove



AND PROVIDES MAXIMUM PROTECTION

A tight, moisture-proof closure of the liner is made by a face-to-face series of folds with the extended triangular ears being folded in from the sides. This closure is made with practically no loss of space which means great savings in package material cost.



PNEUMATIC'S *Double Package*

Here is a package which offers maximum protection with space for complete fill. The liner, formed on blocks and then covered with the carton blank, follows the inside surface of the carton and fits exactly into the rectangular shape with liner-to-shell contact all the way.

The Double Package maker machine combines the operation of forming the liner and carton. The lined carton then passes to the filling operation, and on to one of Pneumatic's Top closure units.

This "package within a package" is Pneumatic's answer to modern demands for a container that insures retention of flavor and freshness of its contents. It has been widely accepted among leading producers of such foods as dessert powders, cereals, brown sugar, prunes and prepared flours, including pie crust products. Why not consider the advantages it offers for your product? PNEUMATIC SCALE CORPORATION, LTD., 82 Newport Avenue, No. Quincy 71, Massachusetts. Branch Offices in New York, N. Y.; Chicago, Illinois; San Francisco, California, Los Angeles, California.

PNEUMATIC LOWER COST PER CONTAINER

PACKAGING AND BOTTLING MACHINERY

Over eighty different machines for the packaging of dry, free-flowing products and the cleaning, filling, capping and labeling of containers for liquids and semi-liquids

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ORGANOSOLS
BY Watson-Standard

VINYLITE Organosols are the most versatile group of technical coatings made available and present unlimited opportunities in the paper, foil, and textile industries. This new series of coatings is highly resistant to water, grease, oil, chemicals, and heat. They are chemically inert, non-toxic, tasteless, and may be heat-sealed. Utilizing inexpensive solvents, solids of 60% and higher are now being produced commercially, with uniformity readily controlled by our commercial experience and laboratory techniques.

High Solids VINYLITE Organosols are practical and easily adaptable to your own use. Typical applications include luggage, paper table cloths, window shades, drapes, food packages and other containers, etc. These prescription compounded coatings are made in brilliant colors or water clear, and produce a high gloss surface that is free from cracks and creases. Write for a copy of Technical Data Folder on High Solids VINYLITE Organosols.

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Prescription Finishes
Give us your coating problem. We guarantee you an answer based on your conditions and not just a standardized formula.

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BOSTON, BUFFALO, DETROIT, NEW YORK

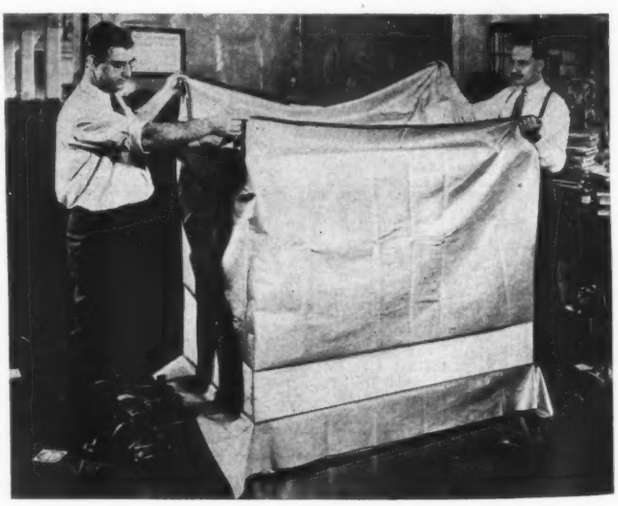
*VINYLITE is a trade mark of BAKELITE CORPORATION, Unit of Union Carbide and Carbon Corporation.

Questions and answers

(*Continued from page 150*) material will depend upon the type and finish of the paper, the construction and manufacture of the container and the operating characteristics of the coating itself. The greatest difficulty with a satisfactory oil-proof container is in obtaining a continuity of coating on the inside of the finished package since it is extremely doubtful if any coating or fabrication method will allow the construction of an oil-tight package from previously coated paperboard. There have been attempts to make oil-proof containers with a separate lining of a plastic film, such as Pliofilm, vinyl or other strong heat-sealable, oil-proof film. These types of containers have better durability and flexibility at low temperatures and under rough handling. However, regardless of the type of container it is always difficult to make a closure, after filling, which is as strong and oil-proof as the rest of the package. This may be achieved by the use of heat sealing coatings or by special adhesives used to close a seam or opening in the package. It is suggested that you obtain a large number of different coatings, formulations, laminations, etc., which have been submitted as being greaseproof and try these in the package form you have in mind.

Humidity control

In tests conducted at Lord Baltimore Press, the use of a new material, Aquastop M-V-Bar, is said to have overcome the adverse conditions of humidity, a constant problem to the printing industry. The material, made by Protective Coatings Corp., Belleville, N.J., is a synthetic, impregnated, coated and chemically treated strong fabric, flexible under varying temperature conditions, also water and water-vaporproof. Printed sheets are loaded on skid platforms over sheets of the material. A prefabricated bag of the material is inverted over the load, then bottom sheet and bag are sealed. The method maintains paper in proper working condition, it is claimed.



THE *New Rodgers* PACKAGE FILLER

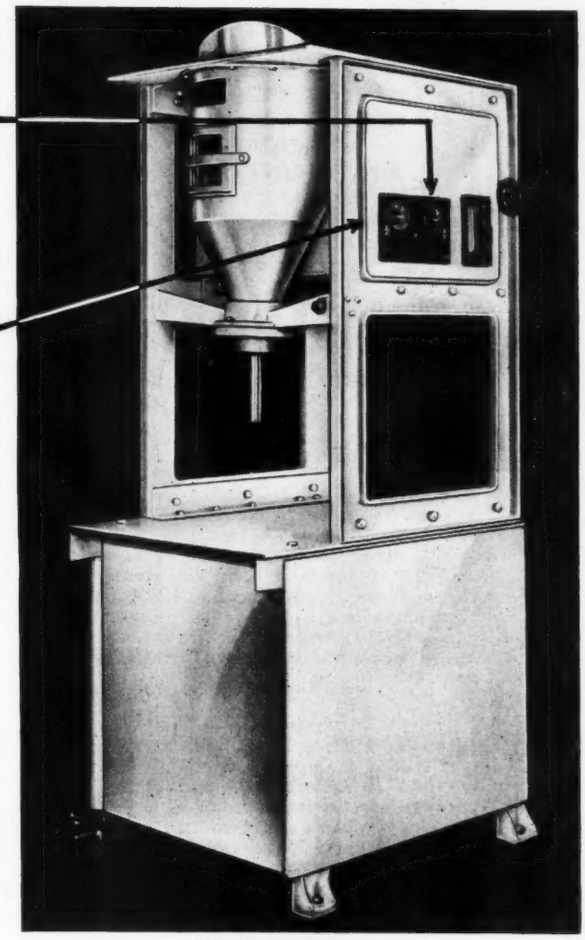
1 Simple dial adjustment controls package fill time. This allows accurate changes for any type of material. Auger speed is variable and independent.

2 Package transfer time can be easily set by a dial to accommodate the slowest or fastest operator.

3 The settings for both transfer time and filling speed are completely independent of each other. Cams are eliminated. No tools are necessary to regulate the variables for a changeover.

4 No clogging of bearings possible in filling because all mechanisms are above the auger and tube. The machine has a minimum of mechanical linkage.

5 The Rodgers Filler has a range from 1/3 ounce to 10 pounds, height is 79", floor space 29" x 36", shipping weight approximately 700 pounds.



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Send us a sample and let us give you a practical demonstration.

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- Carton Sealers
- Tube and jar fillers
- Tube closers
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- Stainless steel kettles
- Stainless steel tanks
- Belt conveyors
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Catalog on request.

Our engineers are equipped to design many labor-saving devices in the packaging field. Your inquiries are solicited.

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or automatically wrapping and labelling

CAKES, COOKIES
FRESH FRUITS AND VEGETABLES
DRIED FRUITS, CANDIES
MEATS, CHEESE, FROZEN FOODS
TEXTILES, PAPER NAPKINS
ETC., ETC.

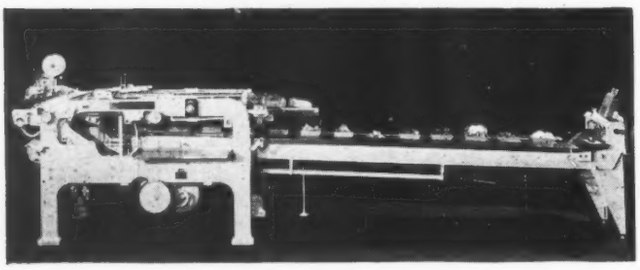
"OLIVER"

Handles Packages in Widest Range of Sizes

The versatile "Oliver" is made in five different size ranges. In the aggregate they will handle packages as long as 14¾ inches, as wide as 8½ inches, as high as 5¼ inches; and as short as 3⅛ inches, as narrow as 3 inches, as low as 1 inch, and even thinner. Moreover, the size range of each model is based on careful research and planning, even to the overlapping of capacities. Frequently one or two "Oliver" machines in the packaging department can handle all the packages.

Easily Adjusted in a Few Minutes

On the "Oliver" you can make a complete change for package size in two minutes. And in another two minutes you can change and thread the roll of "Oliver" Roll-Type Thermoplastic Labels. You can change from endfold to underfold at the flick of a finger. *Consider the time these quick, simple adjustments will save you every day!*



The "Oliver" Wrapping Machine wraps products in cartons, trays, U-boards and flat cards in cellophane, wax and other heat-sealing wrappers. Available with 6-foot, 9-foot, or 12-foot infeed conveyor. Automatically folds and feeds U-boards and flat cards. Automatically codes cardboards, cartons, labels. Uses rolls of colorful, diecut thermoplastic labels (printed by "Oliver"). Automatically prints essential information on standard "blank" label just before it is heat-sealed to outside of wrapper. Electric-eye registration of printed wrappers. *A girl can operate the "Oliver."*

Write for Full Details

OLIVER MACHINERY COMPANY
PACKAGING DIVISION GRAND RAPIDS 2, MICH.

"Oliver" Wrapping Machine
WITH "OLIVER" AUTOMATIC ROLL-TYPE LABELLING SYSTEM

Pressure in bottles

(*Continued from page 147*) maximum filling heights of volatile liquids in bottles. In general a space equal to 6% of the total volume of the bottle will be aedequate. The calculated values show this to be true even for acetone which has a high coefficient of cubical expansion as compared with some other organic liquids such as alcohol.

Derivation of formula

V_1 = Volume of liquid in bottle at t.
v_1 = Volume of free space in bottle at t_1.
$x = \frac{V_1}{v_1}$ = ratio, liquid to free space volume.
P_1 = original pressure in free space when bottle is closed.
t_1 = original temperature in degrees centigrade.
t_2 = final temperature in degrees centigrade.
p_1 = vapor pressure of liquid at t_1.
p_2 = vapor pressure of liquid at t_2.
$P_1 - p_1 = Q_1$ = partial pressure of air in free space at t_1.
dT = temperature change from t_1 to t_2.
a = coefficient of expansion of the liquid.
$V'_1 = V_1 a dT$ = expansion of the liquid from t_1 to t_2.
$V_1 + V'_1 = V_2$ = volume of liquid at t_2.
P_2 = pressure in free space at t_2.
$P_2 = p_2 + Q_2$.
$P_2 - p_2 = Q_2$ = partial pressure of air at t_2.
$v_1 - V'_1 = v_2$ = volume of free space at t_2.
$v_1 Q_1 = nR\,(273 + t_1) = nRT_1$.

$$nR = \frac{v_1 Q_1}{T_1}.$$

$$v_2 Q_2 = nR(273 + t_2) = nRT_2 = v_1 Q_1 \frac{T_2}{T_1}.$$

$$Q_2 = \frac{v_1 Q_1 T_2}{v_2 T_1} = \frac{v_1 Q_1 T_2}{(v_1 - V_1) T_1} = \frac{\frac{V_1}{x} Q_1 T_2}{\left(\frac{V_1}{x} - V_1 a dT\right)} T_1$$

$$= \frac{V_1 Q_1 T_2}{V_1(1 - xa\,dT) T_1} = \frac{Q_1 T_2}{(1 - xa\,dT) T_1}.$$

$P'_2 = P_2 - P_1$ = increase in pressure.

$$P'_2 = p_2 + Q_2 - P_1 = p_2 + \frac{Q_1 T_2}{(1 - xa\,dT) T_1} - P_1.$$

CORRECTIONS

In our December report of the Packaging Institute proceedings, a statement by M. M. Zimmerman, *Super Market Merchandising*, should have read: "So entrenched financially has this industry (supermarket) become that investments in buildings and equipment for a single unit may range from $100,000 to as high as ¾ of a million."

In the "Pressurized Perfume" article, (Dec. p. 107) the credit should have read: "Imperial Paper Box Corp., Brooklyn, N. Y."

•Colorful, sparkling Dobeckmun packages do *double duty* for food products! Their permanent flavor-tightness holds for your customers that same full-flavored freshness you pack in at the factory. And what a selling job they do! Handsomely printed in brilliant multicolor that speaks right out to potential buyers, they focus attention on your merchandise, particularly in self-service markets and where impulse buying counts. Whether it's cellophane or other film, metal foil or coated paper, alone or in smart laminated combinations, Dobeckmun provides a package engineered for your specific requirements.

ENGINEERED TO YOUR NEEDS

Cellophane bags: either single, duplex or "Tri-tect"; printed or plain; flats, squares or satchels.

Freezer bags: of special, heat-sealing, coated paper; pints and quarts in handy carton dispensers. Other custom sizes.

Printed overwraps: with true-to-life illustrations of contents in handsome multicolor printing.

***Metalam:** heat-sealing laminated aluminum foil and film, combining permanent moisture-vapor-proof protection with unexcelled attractive appearance.

Ask for samples and suggestions on Dobeckmun packages.

**Reg. U. S. Pat. Off.*

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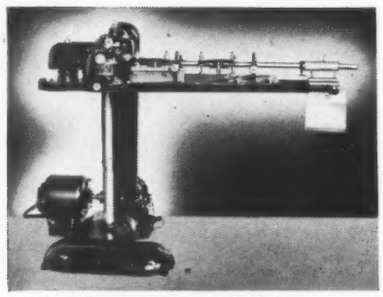
DOBECKMUN
Self-selling packages in processed films and foils

Branches in Boston, Chicago, Cincinnati, Los Angeles, New York, Philadelphia, San Francisco and Seattle. Representatives everywhere.

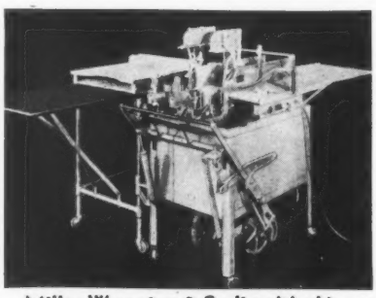
AMSCO

SOLVES



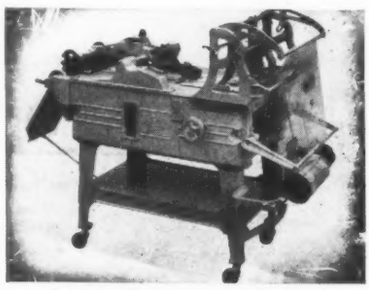
Amsco Automatic Rotary
Bag Sealing Machine

YOUR



Miller Wrapping & Sealing Machine

PACKAGING



Simplex Bag Making Machine

PROBLEMS

Step up production and cut down your costs with Amsco equipment —adds speed and efficiency to your packaging.

- bag sealing
- bag making
- bag and carton weighing and filling
- bag aligning and conveying
- wrapping
- sheeting and gluing
- sandwich making and wrapping
- hand and foot operated sealing devices

AMSCO PACKAGING MACHINERY, INC.

31–31 FORTY-EIGHTH AVENUE
LONG ISLAND CITY 1, N. Y.

STILLWELL 4-4840

Insects

(*Continued from page 145*) thermoplastic wax. Such cartons could be used to package goods that would have to endure severe storage, both from the standpoint of climate and possible insect infestation. If not subject to serious insect infestation, many of the packages now in use are in little danger of being penetrated. Under good storage conditions it is likely that many materials, such as cereal products, would deteriorate from other causes before the packages would be penetrated by insects.

Much trouble could be avoided if materials were packed only at a rate sufficient to meet the demand. Further, packaged goods should be distributed in an orderly manner so that the first packed is the first moved.

Care should also be undertaken to see that infested materials are not packed. A considerable amount of the trouble encountered is not due to insect penetration but due to the fact that infested materials were packed.

Investigation of chemical barriers

Investigations have been conducted in which toxic chemicals have been incorporated in paper, fibreboard and wax coverings of packages. Several of the dinitro phenol derivatives and DDT have shown much promise in preventing insect penetration. However, the effectiveness of DDT is very adversely affected by holding it in a molten wax solution (190 deg. F.) for the length of time it would be necessary to dip the cartons on a commercial scale. It is suggested that 5% of DDT be incorporated in the wax.

Most stored-product pests are not adapted for boring and as a result they are not good penetrators of packaging materials. Some probably have no ability to penetrate. The saw-toothed grain beetle, *Oryzaephilus surinamensis* (Linn.), a widely distributed pest of cereal products and dried fruit, was tested against a large number of package materials but failed to penetrate any of them that were insect-tight. Such common pests as the confused flour beetle, *Tribolium confusum* (Duv.), and the various moths all appear to be poor penetrators. The granary weevil, *Sitophilus granarius* (Linn.), unexpectedly was found to be a good penetrator of packaging materials that were thin. The lesser grain borer, *Rhizopertha dominica* (Fab.), a very small insect with well-developed wood boring habits, was found to be a good penetrator of many packaging materials. This was particularly true in the case of the thinner ones.

The drugstore beetle, *Stegobium paniceum*, (Fig. 3) has fairly well developed boring habits. However, our investigations showed that this insect does not have a tendency to bore into packages, but readily bores out of them. It is a widespread pest that causes much annoyance and its presence in packages would indicate that infested material was packaged. The hide beetle,

HAZEL-ATLAS FACTORIES AND SALES OFFICES

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Home office and Metal Plant
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Hazel No. 2
Atlas
ZANESVILLE, OHIO
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Zanesville No. 2
LANCASTER, N. Y.
GRAFTON, W. VA.
CLARKSBURG, W. VA.
MONTGOMERY, ALA.
Under Construction
ADA, OKLA.
BLACKWELL, OKLA.
OAKLAND, CALIF.
POMONA, CALIF.
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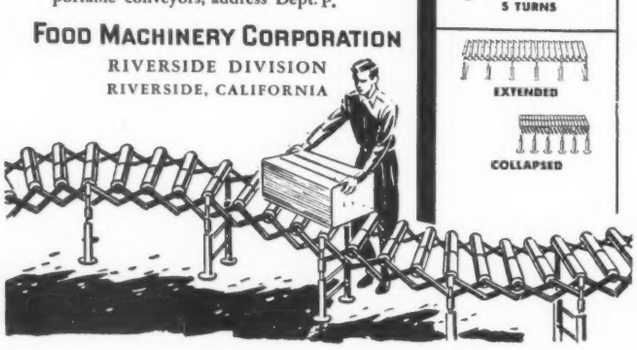
CONVEYOR
can handle your package handling problems

AVAILABLE NOW! Sturdy, steady and dependable, flexible enough to meet scores of different material handling needs. Saves valuable man-hours—reduces handling costs... ends "aisle-jamming." Collapsible, gravity operation, can be quickly set for practically any curve or turn. Roller design keeps box on conveyor regardless of curves. For free literature on FMC standard and portable conveyors, address Dept. P.

FOOD MACHINERY CORPORATION
RIVERSIDE DIVISION
RIVERSIDE, CALIFORNIA

Sets up anywhere in a few minutes



Dermestes vulpinus, has rather strong boring habits and under certain conditions may bore into packages. Termites, although not ordinarily thought of as stored-product pests, will bore into packages if they are stored where termites are present. Damage may be very severe if the packaging material contains cellulose. By far the best penetrator that we encountered was the cadelle, *Tenebroides mauritanicus*. The larva has a strong boring instinct which is particularly well developed when it reaches maturity. When ready to pupate, the full-grown larva bores into wood or any similar material to construct a pupal cell. Thin material, although smooth and tough, offers very little resistance to penetration by this pest. Under proper environmental conditions it will penetrate the more resistant packages. In Fig. 4 are shown cartons which were double wax-dipped in a thermoplastic wax which were penetrated by the cadelle.

Conclusions

Stored-products insects are among the most destructive in relation to agriculture in that they destroy the finished product, after all the expenses of seed planting and harvesting have been incurred. Their depredations often go unhampered so that in the long run losses due to them run into millions of dollars. The insects most responsible for these losses are mealyworms, the cadelle, the drugstore beetle, the saw-tooth grain beetle, the hide and tallow beetle, the Indian-meal moth and the Mediterranean flour moth.

Control measures consist in seeing that the harvested products are free from these insects when placed in storage and that the storage is also free from contamination. Infested materials should be promptly fumigated and stored in clean places. Materials to be placed in small packages for the retail trade should be selected from materials as resistant as possible. Packages should be streamlined, as free as possible from folds and creases and perfectly sealed in every respect. Almost any type of package that is properly made and adequately sealed will protect the contents over a long period of time providing both the contents and package are properly sterilized at the beginning.

Impulse buying

(*Continued from page 129*) accomplishing this end. How will your particular package compare with the other products in the store (2,800 in the average grocery) with which it must compete for attention? You may wish to check this in some actual stores.

The package must tell the product story—What is it? What size? How much? These are a few of the many things the package must tell quickly and adequately. Informative labeling is picking up its progress, retarded somewhat during the war.

The package must build confidence—Is it the quality I want? Is the maker reliable? Is it fresh? Is

IS YOUR PACKAGE A Show Off?

IF IT'S NOT, YOU'RE LOSING SALES!

There's no room for "shrinking violets" in modern retail displays. Hemmed in by competing brands, your package must show off your product to its best advantage — must do a complete selling job to *win* sales. A.P.G.'s distinctively designed, transparent and semitransparent packaging shows off your brand name effectively, shows off the quality of your product — shows off *all* the selling features that make Mrs. Consumer want to buy your brand. A.P.G.'s representatives throughout the country know what modern merchandising requires of a package, and how to produce it. For the services of the one nearest you — at no obligation — simply write to our General Sales Office, 122 East 42nd Street, New York 17, N.Y. or to 4711 Foster Avenue, Chicago 30, Ill.

YOU HAVE THE PRODUCT — A. P. G. HAS THE PACKAGE

MEMBER FLEXIBLE · PACKAGING fpi INSTITUTE

Sales-building cellophane or glassine bags and envelopes. Custom-built for your own particular needs. A complete range of stock sizes — printed or plain.

Smartly styled opaque envelopes in special prints, and in any size you may require, as well as all stock sizes — printed or plain — in special papers or regular grades.

PACKAGING FOR THE NATION'S PRODUCTS SINCE 1893

APGCo

The American Paper Goods Co. OVER 50 YEARS OF SERVICE

KENSINGTON, CONNECTICUT — CHICAGO, ILLINOIS

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its original quality fully protected? These are some of the unasked questions to which the average consumer wants answers. The package is depended on to supply answers. The "quality" product must look its worth.

The package must look clean and sanitary—Shoppers—women shoppers especially—are becoming more and more sanitation conscious. This is increasingly evident in the attitude toward the purchase of food and particularly food for children. The publicity given last summer to the statements by public health officials that open display of unprotected food might be a means of spreading infantile paralysis germs is bound to accentuate the shopper's interest in this direction.

The package must be convenient to handle, to carry out of the store and to use—Improved opening devices and reclosures on packages are examples of satisfying the public in this direction.

The package must look like good value—Millions of American housewives are finding today that their dollar won't go as far in buying food and other commodities. The spending of precious ration points during the war also made a double check of values necessary—a habit that is bound to carry over. Consequently, the package that looks like "full money's worth" is likely to do a real job in clearing up doubts.

The dealer factors

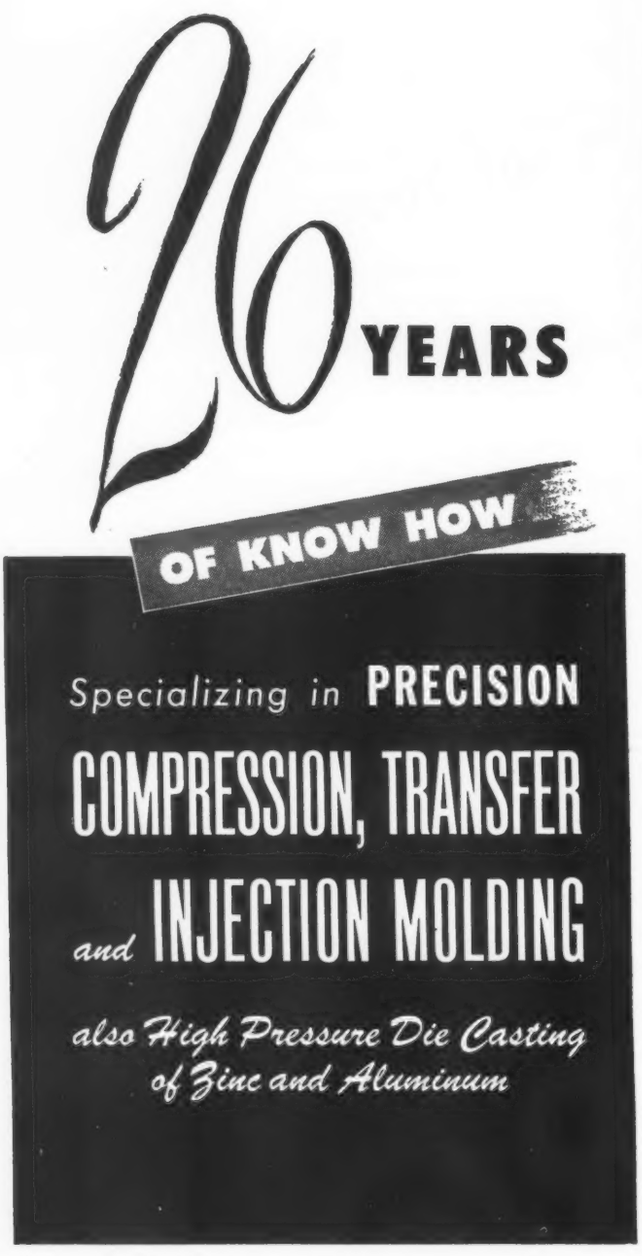
In addition to these consumer factors there are several factors important from the dealer standpoint. These include the following:

The package must look like a fast seller—The shrewd retailer knows that fast turnover is one of his principal assets. His past experience concerning which types of packages sell and which don't sell will be drawn on in making his decision whether to stock the packaged product you are offering him.

The package must deserve a preferred display—Every retail store has its choice spots—the places where things "go like hot cakes." The aim of your package is to get a position where it will have maximum chance to be seen by shoppers in the store. You or your salesman usually won't be there to pick this spot. The package must so impress the dealer that he just naturally gives it a chance to go to work. A survey among representative stores to determine just where your package is being displayed in relation to self-service opportunities, and why, may provide valuable data for future use. In our surveys two out of three purchasers of impulse items admit that they were influenced by the fact that the items were given special display.

The effective package must minimize the clerk's selling time—The package that answers questions—tells its story quickly—means faster handling by clerks, which is vitally important in the rush hours. How does your present or proposed package check on this point?

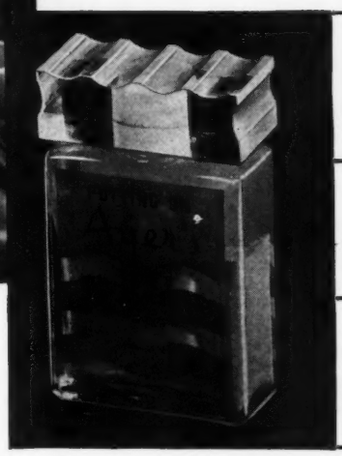
The effective package must be convenient to stock and display—Every progressive dealer prides himself on neat displays. Packages that topple over, that won't stack, that roll around, are troublesome and need



PLASTIC & DIE CAST PRODUCTS CORP.

1010 EAST 62nd STREET • LOS ANGELES 1, CALIF.

Roy L. Peat, President Established 1920



Decorators and Printers

Creative means the finest decoration on your glass, plastic or metal container —

Creative means unlimited production facilities —

Creative means an expert technical staff to solve your printing problem.

Creative

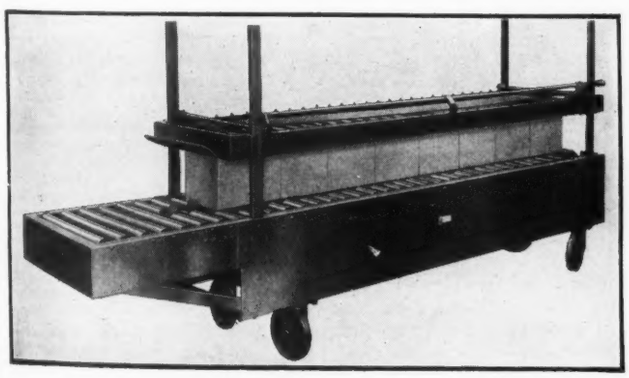
PRINTMAKERS, INC.

200 VARICK STREET, NEW YORK 14, N.Y. • WALKER 5-6300

SURFACE DECORATORS FOR THE PACKAGING FIELD

In Canada: 2424 Yonge Street, Toronto, Ontario

Increase Efficiency ... Cut Mfg. Costs



With the ABC HAND GLUER

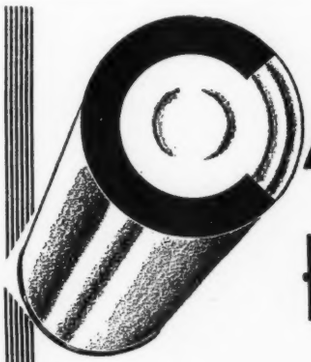
Designed for plants with limited production runs. Applies pressure to corrugated container flaps while adhesive sets, eliminating several operations. *Reasonably priced.*

Adjustable for containers 3" to 26" wide; 4" to 40" long; 1½" to 30" high.

Special Engineering Service

Packaging machines correctly designed and constructed to fit your own special requirements.

ABC PACKAGING MACHINE CO.
QUINCY, ILLINOIS



CANS

FOR ALL PRODUCTS

PLAIN OR LITHOGRAPHED

A REAL GOOD SOURCE

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Telephone: IRonsides 6-4972

PAK-SAFE*

Pampers Meats, Fish, Foul in the Freezer

Pak-Safe*—Du Pont MAT cellophane laminated to white wet-strength Kraft—is Milgate's own locker wrap—developed to give true protection to all frozen foods prepared for the freezer. It not only gives the 3-way protection of Kraft, laminating agent and cellophane—but saves the *double* wrapping *necessary* with other type locker wraps. When used correctly, Pak-Safe*-wrapped products are as delectable as before freezing, retaining all their original taste, eye-appeal and *sales-appeal.* Obtainable in large Bulk Rolls and Resale Rolls: 18" and 24" widths. Immediate delivery from stock. Send for samples today.

Use Pak-Safe* and Pack Safe

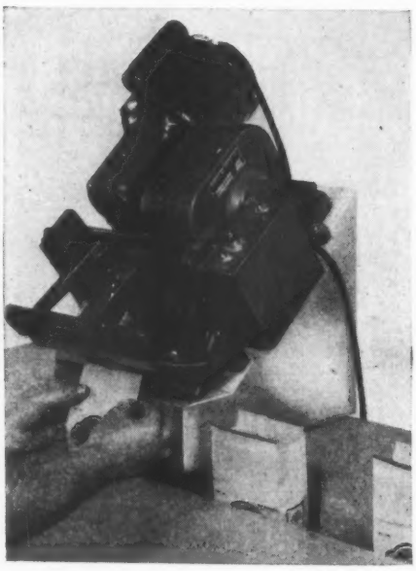
* A Milgate Product—your assurance of quality.

Packaging Division 784 Public Ledger Building
E. W. Twitchell Incorporated Philadelphia 6, Pa.

PROMPT DELIVERY

Wrap-Ade Heat Sealers

PRECISION BUILT



Saves Money

•

Saves Labor

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Correct Controlled Heat

•

Constant Timed Pressure

We will gladly furnish details on our new fully automatic continuous Heat Sealer

WRAP-ADE MACHINE COMPANY, INC.
778 BERGEN STREET BROOKLYN 16, N. Y.

improvement. Here again retail surveys will show how your product qualifies in this respect.

The package must prevent spoilage during the selling period—The product may be good when it leaves your plant, but what is its condition when it goes out of the store into the home? This determines the degree of protection needed. Failure to provide the necessary protection means non-salable merchandise—or worse still, a dissatisfied customer and a complaint.

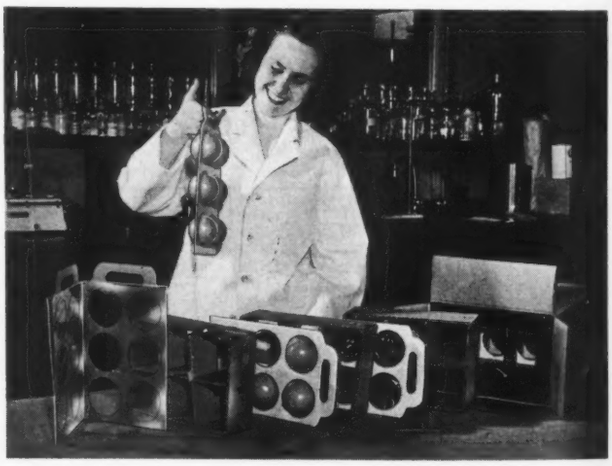
The package must resist soiling—Dust and handling are constant enemies attacking packages that were clean and attractive when they left the maker's plant. How do they look out in the dealer's stores? For years one of the large drug houses has had damaged samples picked up from stores throughout the country and sent to headquarters to aid in a continuous study of package improvement.

The effective package for attracting impulse buying should do two things: It should be an advertisement and it should be a salesman.

A hammock for fruit

Elimination of bruising in shipping perishables is said to have been made possible by the development of a new method of packaging fresh fruit in Pliofilm.

The process prevents swaying or contact as each individual fruit is sealed and suspended in Pliofilm.



It was developed by Dr. Spencer A. Larsen, director of the Air Cargo Research of Wayne University, Detroit, and the Goodyear Research Laboratory.

Two sheets of cardboard, covered with very thin Pliofilm, are the basis for the package. Cut on each sheet are round holes. The pieces of fruit are placed over each opening in one of the cardboards. The Pliofilm, having been slightly heated, stretches and the fruit settles into a rounded "cradle." The second Pliofilmed cardboard is similarly heated and pressed over the fruit. The sheets, in contact, form a heat-seal.

The carton is separated into squares by partitions of cardboard. The cardboard sheet is placed over these squares so that each fruit, without touching the partitions, rests above opening. Partitions fit over fruit.

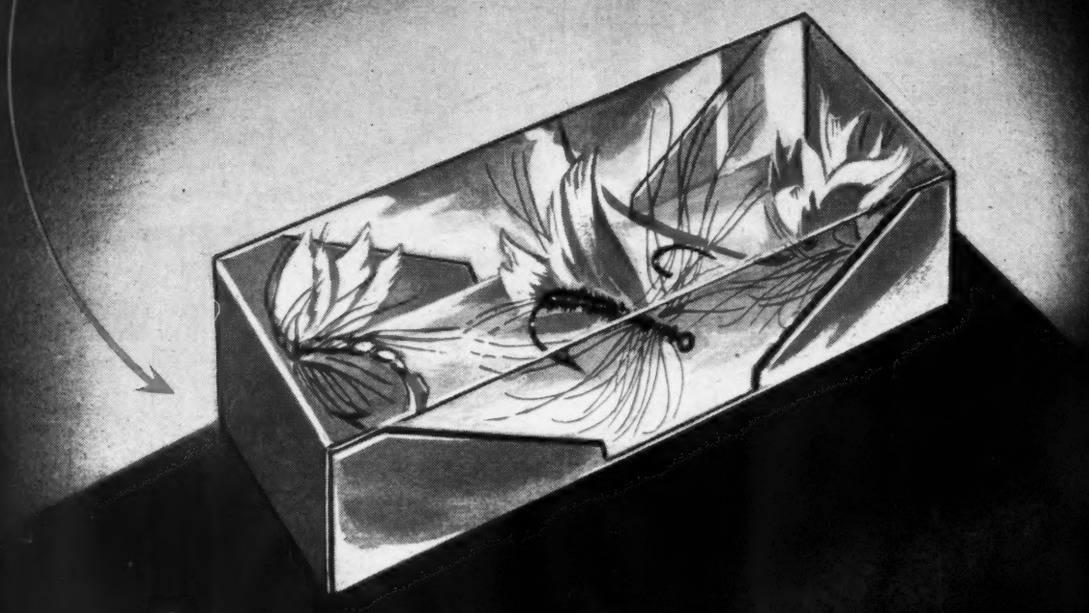
THE BETTER THE PRODUCT THE MORE IMPORTANT THE PACKAGE

Your best sales-bait is

YOUR PRODUCT

packaged for

glamourous visibility



Acme creates the ideas in acetate...

Visibility creates sales... especially when you show your product to best advantage in eye-appealing, transparent packaging . . . designed by Acme.

- INTRIGUING SET-UP BOXES
- SPECIALIZED PACKAGING
- CREATIVE FOLDING CARTONS
- UNUSUAL MERCHANDISE COUNTER DISPLAYS

ACME PAPER BOX COMPANY... STATE AT SIXTIETH STREET

CHICAGO 21, ILL.

CREATORS • DESIGNERS • MANUFACTURERS

Styled in Color

There is no substitute for elegant color styling to improve eye appeal and stimulate sales. Our duplex (two-coat) COLOROID process adds new life and brilliance to any good product marketed in large volume. If your present production on plain glass containers is in large volume, we invite your inquiry.

COLOROID Corporation

W. 58th & Walworth Avenue, Cleveland 2, Ohio

BRASS CAPS

We can supply them in a number of sizes . . . plain or plated . . . or develop new designs,

Or we can electroplate your PLASTIC caps in beautifully finished Gold, Silver, Rhodium, Copper or Nickel.

Our COMPLETE SERVICE *includes*

- BRASS AND ALUMINUM CLOSURES
- SPECIAL PLASTIC CLOSURES AND CONTAINERS
- GLASS STOPPER GRINDING AND GLASS POLISHING
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FRANK J. SUTPHEN
CENTRAL 3242
185 N. WABASH AVE. • CHICAGO 1, ILL.

MANUFACTURERS OF

FOLDING CARTONS • WINDOW & COUNTER DISPLAYS • DIE CUT SET-UP BOX BLANKS • PAPER CARRIERS • 2 PC. FLATS FOR STITCHED OR METAL EDGE CARTONS • DIE CUT INSERTS FOR TANGIBLE MERCHANDISE • SUIT & MILLINERY CARTONS • BAKERY CARTONS • PARCEL POST SHIPPERS • PARTITIONS OF ALL TYPES

WESTERN CARTON COMPANY
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CREATORS – DESIGNERS OF DISTINCTIVE PACKAGING AND SPECIALTIES
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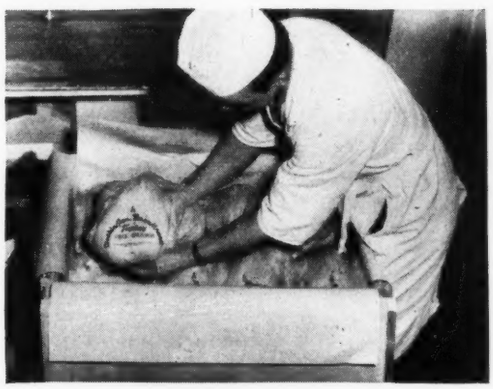
TRANSPARENT PACKAGES *by Traver* . . .

TURKEYS

Fifteen seconds to a bird: Complete packaging with an air-tight seal is made possible in this record time with PEARLON, adaptable new plastic packing material by Traver. As the bird is placed in this sturdy, patented ROUND END bag, all air is evacuated and a quick tie leaves the turkey thoroughly protected in semi-vacuum.

PEARLON is an inert substance — tasteless, odorless, greaseproof, waterproof and freezeproof—which assures complete preservation. Attractively printed PEARLON creates demand: Consumers remember quality and ask for PEARLON-packaged birds.

Members of the Washington Cooperative Poultry division and Traver technicians make a pleased inspection of a PEARLON-wrapped turkey off the production line.



Confident of the full protection afforded by the flexible PEARLON ROUND END bag, a worker packs a box of turkeys for shipment.

Photos show Traver transparent sales package in actual use

Traver CORPORATION

WRITE OR WIRE—DEPT. M

358 WEST ONTARIO STREET, CHICAGO 10, ILLINOIS

CONVERTERS, PRINTERS-CELLOPHANE, PLASTICS, ACETATES, FOIL AND GLASSINE

WAXES

For paper board impregnation

ZOPHAR MILLS 101 YEARS

FOR DIP COATINGS
EMULSIFIED WAXES
COATING WAXES

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Meet Army and Navy specifications
WAXES FOR FUNGUS PROOFING
Our laboratory will welcome your problems

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Zophar Mills, Inc. has been known for its dependable service and uniformity of product since 1846.

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Established 1846
106-26th Street • Brooklyn 32, New York

PERFECT REGISTER ... TREMENDOUS SPEED

THIS brand new No. A-4 aniline printing press offers perfect register at highest speeds on cellophanes, foils, and other materials your customers require for wrapping their products. Many other models in our complete line of presses are available for the aniline printer. Write us for complete detailed descriptions.

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MACHINE CO • GREEN BAY • WIS

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Check for the one nearest you

(See KIMPAK on facing page)

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Oakland . . . " " "
Sacramento " " "
San Diego . " " "
San Francisco " " "
San Jose . . " " "
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Detroit . . . . . The Whitaker Paper Company
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Jackson . Crown Paper & Bag Co.
Kalamazoo . . . . . Bermingham & Prosser Co.
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**KIMPAK (trade-mark) means Kimberly-Clark Creped Wadding*

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin

122 E. 42nd St., New York 17 • 8 S. Michigan Ave., Chicago 3
155 Sansome St., San Francisco 4 • 22 Marietta St., Atlanta 3, Ga.

Protects your product against concealed shipping damage

Whether the packaging of your product calls for Surface Protection, Absorbent Packaging, Flotation Packaging, or Bracing and Blocking, there's a specification of low-cost KIMPAK* to do the job perfectly. For cushiony KIMPAK has every quality required in all four of the Basic Methods of Interior Packaging.

KIMPAK is soft, grit-free, and chemically neutral. Can be supplied in liquid absorbent or liquid repellent specification. Provides more cushion than many materials of far greater weight and density. And it's as quick and easy to use as wrapping paper!

Discover how KIMPAK can increase protection in your packaging. Phone your local distributor today, or write Kimberly-Clark Corporation, Creped Wadding Division, Neenah, Wisconsin.

We are producing all the KIMPAK Creped Wadding we possibly can, but due to the great demand, your distributor may have some difficulty in supplying you immediately.

Kimpak
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A PRODUCT OF Kimberly Clark RESEARCH
CREPED WADDING

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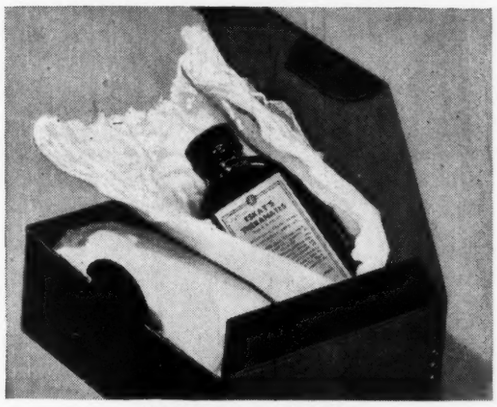
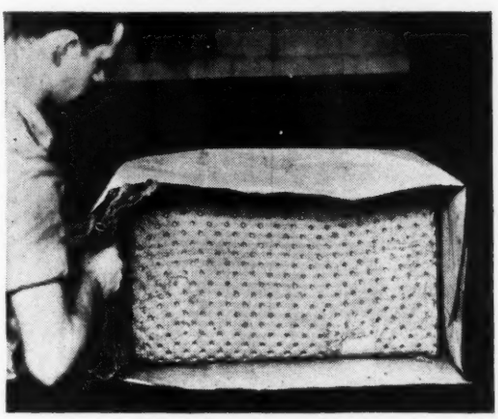
SURFACE PROTECTION
Photo courtesy Edison G. E. Appliance Co.



ABSORBENT PACKAGING
Photo courtesy Smith, Kline & French



FLOTATION PACKAGING
Photo courtesy Marconi Radio & Television Co.

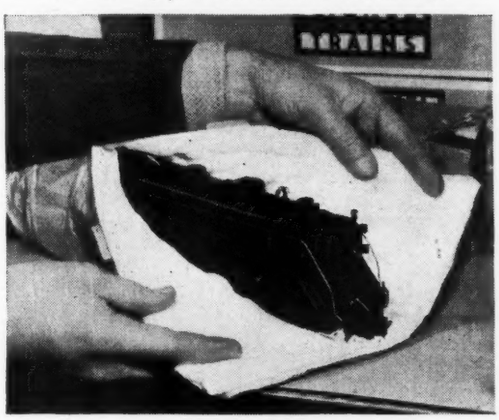


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Photo courtesy Lionel Mfg. Co.

WOOD Caps

ANY SIZE
ANY SHAPE
ANY COLOR

with rust-proof metal inserts pressed in securely for perfect fit

We have made millions of wood caps for leaders in the Cosmetic field.

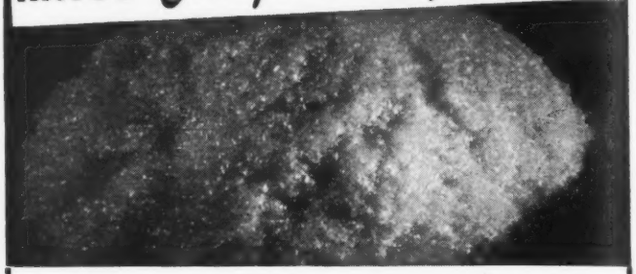
Let us plan with you on your next packaging problem.

Delivery 4 to 6 weeks

Gibson Jones Co., Inc.

400 Madison Avenue, New York, N. Y.

RAYCO "Cellophane Spangles"



Give 'em a glow to make 'em GO!

A surface coating of "Spangles" makes better merchandise-movers of your

BOXES • CONTAINERS • SIGNS • DISPLAYS

Easily adhered to any material (paper, cloth, cardboard, glass, wood, metal, plastic) "Spangles" give a lustrous sparkle that's truly distinctive. Clear spangles give colored effects using colored adhesive.

Request samples of "Spangles"

RAYON PROCESSING CO. OF R. I. INC.

110 Tremont Street, Central Falls
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Decorators on Glass and Plastic Containers Since 1936

4 Colors in One Operation —Finest Detail

Amigraphic Process, Inc.

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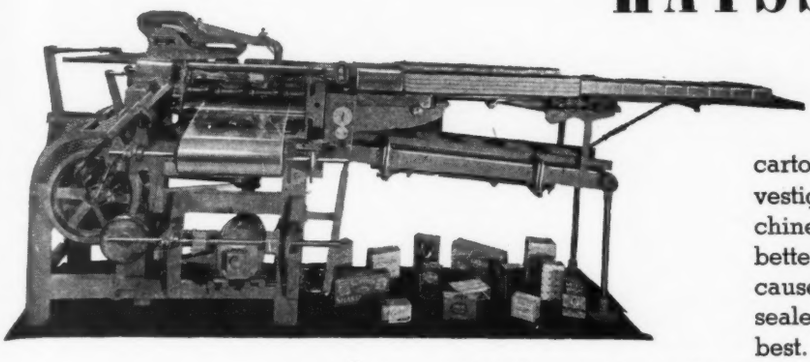
HAYSSEN for protection

HAYSSEN for attractiveness



When you are looking for a wrapping machine to wrap your cartons in the best possible manner, investigate the Hayssen Wrapping Machine. Your finished product has a better chance of being self-selling, because the overwrap is wrapped and sealed to make your package look its best. Heat-sealing material, either printed or plain, is handled with equal ease, and a variety of sizes accommodated. A girl can supervise the operation. Write the Hayssen factory now for complete information—it's yours for the asking.

IT PAYS TO WRAP THE HAYSSEN WAY

HAYSSEN MFG. CO., • SHEBOYGAN, WIS.

HAYSSEN ELECTRONIC CONTROLLED WRAPPING MACHINES

Meet the box

that will sell your PRODUCT

Plastic, covered Cardboard and Metal Boxes out of stock or made to order.

Cardboard boxes made to your individual requirements in quantities of 10,000 or more.

Stock jewelry boxes in quantities of 1,000 up.

Additional information upon request.

BUY DIRECT FROM OUR FACTORIES

IRA A. HARMON

489 Fifth Ave. New York 17, N. Y.

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TUBULAR *Paper* PACKAGES

Tubular Paper Packages have very wide use under present post-war conditions. They are sturdy, lightweight, and can be attractively decorated in a wide range of colors.

DIAMETERS: 1/16" TO 2½" IN ANY LENGTHS

Ask for Quotations

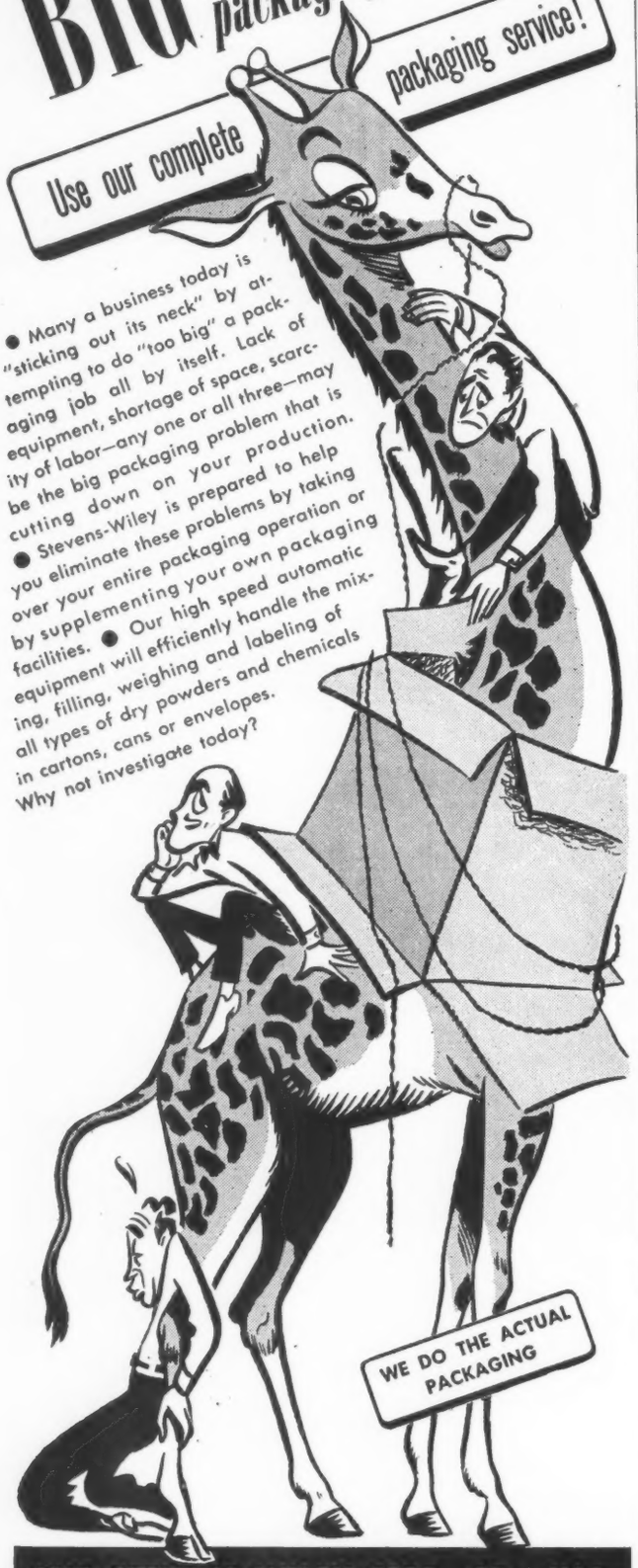
DIAMOND STRAW & MACHINE CO

32-36 WEST 18th STREET
NEW YORK 11 N. Y.

BIG packaging problem?

Use our complete packaging service!

● Many a business today is "sticking out its neck" by attempting to do "too big" a packaging job all by itself. Lack of equipment, shortage of space, scarcity of labor—any one or all three—may be the big packaging problem that is cutting down on your production. ● Stevens-Wiley is prepared to help you eliminate these problems by taking over your entire packaging operation or by supplementing your own packaging facilities. ● Our high speed automatic equipment will efficiently handle the mixing, filling, weighing and labeling of all types of dry powders and chemicals in cartons, cans or envelopes. Why not investigate today?



THE STEVENS-WILEY MFG. CO., INC.
HANCOCK & W. BERKS ST., PHILADELPHIA 22, PA.

★ Here is an exciting new kind of label. It adheres firmly to any smooth surface—metal, plastic, glass, wood, painted or varnished. Won't dry out and fall off—yet like magic are easily peeled off in one piece without leaving a trace! ★ At last you can place instructions, warnings, tradenames, describe finishes, point out features, directly on the product at the very place such data should be carried. ★ When these Kum-Kleen stickers have served their purpose, they may be peeled off without scraping or tearing—a feature your customers will appreciate. ★ They are quickly applied without moistening—are available in any size, shape or color, printed to your specifications. ★

Send for sample and complete information Address Dept. MP-1.

AVERY ADHESIVE LABEL CORPORATION, 36 W. Union St., Pasadena 1, Calif.; 41 Park Row, New York 7, N. Y.; 608 S. Dearborn St., Chicago 5, Ill. and principal cities. In Canada, Enterprise Sales, Toronto.

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PACKAGING CATALOG CORP.
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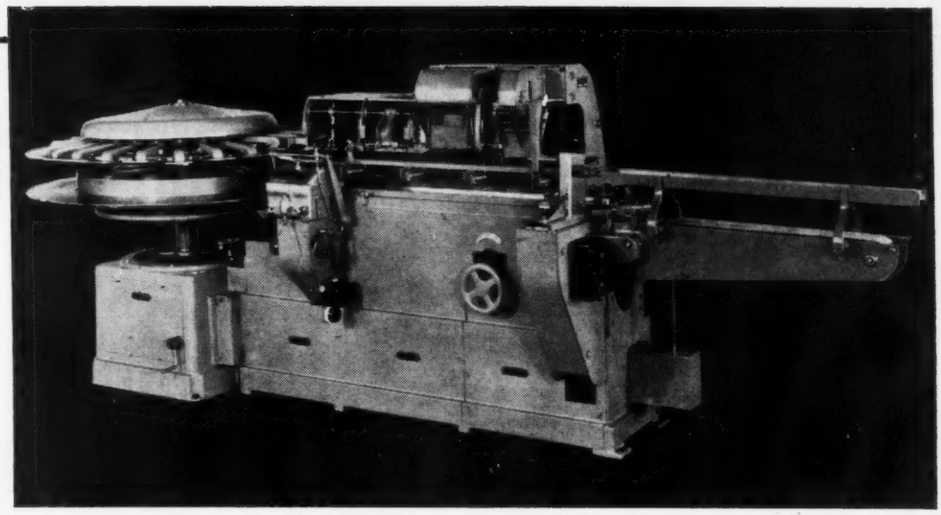
SEALTITE

CUT YOUR PACKAGING COSTS



IMPORTANT savings invariably result when a SEALTITE Bag Sealer is installed in a packaging line. Some users report costs as much as $500.00 lower per month per machine than with previous methods of packaging.

SEALTITE is fully automatic. It opens bags, fills, settles, shapes and seals at speeds ranging from 30 to 50 bags per minute on standard gusseted 2 to 10 lb. paper bags. SEALTITE delivers a square, flat-topped, sift-proof package that stacks like a carton.

If you are packaging in paper bags, write for information on SEALTITE.

CONSOLIDATED PACKAGING MACHINERY CORP.

BUFFALO 13 . N. Y.

Fine Display Settings An Essential Part of Modern Packaging!

☆

Window or counter display created for Speidel Company

☆

For Leadership at "Point of Sale"

36 pages . . . 420 pictures . . . an exhibit of performance. Write for a copy of it today on your business letterhead.

May We Suggest . . .

Now is the time to employ our counsel and services to insure best acceptance, maximum use, consistent results. We are a Display Agency and cooperate fully with your advertising agency to "Pipe-in" the force of national advertising.

America's Largest Organization Specializing in Merchandise Presentation

W. L. STENSGAARD AND ASSOCIATES, INC.

314 N. Justine St. • Chicago 7, Ill.

Festive

TRANSPARENT PLASTIC

BOXES & CANS

for the Yuletide and other holiday and gift occasions

Weinman plastic containers make EVERY package a GIFT package.

Send for samples and packaging suggestions.

WEINMAN BROTHERS, Est. 1919

Transparent Box Headquarters

325 N. Wells St. Chicago, 10

3 "STAR" ADHESIVES

LABELLING GLUE

CARTON SEALING GLUE

CASE SEALING GLUE

BINGHAM BROTHERS COMPANY

406 PEARL STREET • NEW YORK 7

BALTIMORE · PHILADELPHIA · ROCHESTER · NEWARK · GARWOOD

GIVE YOUR PRODUCT NEW PERSONALITY USE LANOVA

Instant delivery—right from stock on most items.

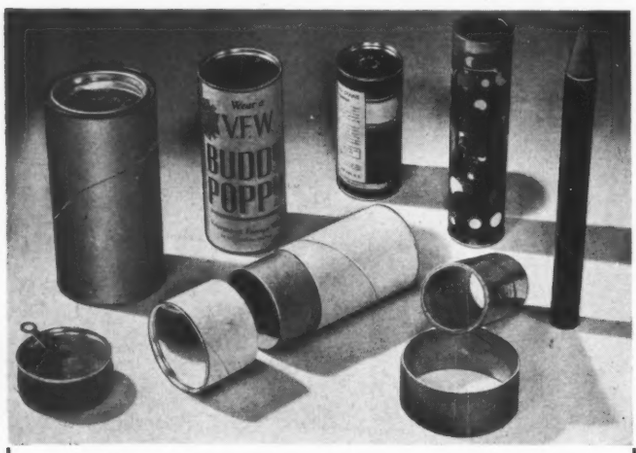
- Metal Foils
- Fancy's
- Embossed
- Wood
- Pyroxylin
- Velours
- Trade Marks
- Flints

Write for sample sheets and books — no charge or obligation.

SPECIALTY AND BOX PAPERS

LACHMAN NOVASEL PAPER CO.

109-111 Greene Street • New York 12, N. Y. • WOrth 4-6426



ROUND TUBES AND PACKAGES

Available Now!

PACKARD offers spiral-wound round tubes and containers in all conceivable lengths and diameters—drum-shape, long, thin, flat. Sturdy and light-weight, PACKARD containers are perfect for any dry commodity—foods, drugs, chemicals, cosmetics, toys, novelties, insecticides, electrical products, shipping, textiles.

And these low-cost containers are available *immediately!* Whether you choose metal-end or paper-cap, plain or labelled—watch your product go in a PACKARD package.

PACKARD CONTAINER CORP.

5811 Park Avenue West New York, New Jersey

Phone Union 5-5818

OPINIONS

on Presses may Differ

... but FACTS — NEVER!

See

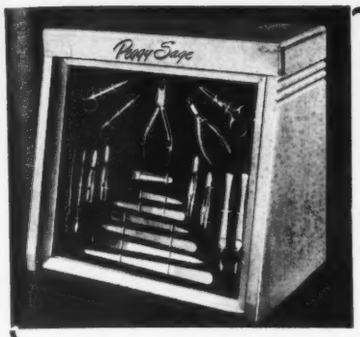
H.H.H.

for the new

Cottrell-Heinrich Aniline-Gravure Press.

H. H. HEINRICH INCORPORATED

200 VARICK ST., NEW YORK 14, N.Y.



DISPLAY PROBLEMS

1. To Introduce a New Line

2. Display must be permanent, styled for class product
3. Must be *more* attractive than competitive displays in order to insure key position in store
4. Must be pilfer-proof
5. Must be easily accessible for selling

SOLUTION: ***The Peggy Sage Counter Display, designed and executed by J. J. Einhorn Co., proved to be the perfect solution to the above problem. This distinctive and handsome display, made of solid blond maple in Swedish Modern finish, combines utility and beauty. Panel on which merchandise is fastened slides into horizontal position and is also easily removable from display. Merchandise may be sold from back or front. Concealed fastener prevents pilfering.***

The same ingenuity that produces displays like this is at your service—to design and execute *your* product display or package.
Display and Packaging Design and Manufacturing Facilities
Wood—Glass—Metal—Plastic—Cardboard

J. J. Einhorn Co.
MERCHANDISE PRESENTATION
MALLEY BUILDING, NEW HAVEN 10, CONN.

For better packages plus economy...

● This efficient new heat sealer offers these advantages: (1) Automatic folding mechanism; (2) New, more effective principle of pressure application; (3) Automatic thermostatic control, adjustable to any heat sealing bag material; (4) big gear-head motor (5) one-year guarantee. Because of its superior performance, we are glad to offer the CRIMP SEAL-IT for **TEN DAYS FREE TRIAL** to rated firms. Send for full information, inclosing bag you intend to seal.

HEAT SEAL-IT CO.
LANCASTER & PARRISH, PHILA. 4, PA.

Originators and Manufacturers of Patented Heat Sealing Equipment since 1932.

Glamour and Utility!

FOR ALL TYPES OF PACKAGING

Your product can be lovely to look at... longer! For, these remarkable, new CLEARSEAL Plastic Coatings can cover your package with cover-girl charm, and assure you complete product protection. CLEARSEAL makes plastic coated foils, fabrics and papers for packaging, to your own specifications of service. Safely waterproofs, moisture-vapor proofs and guards against insidious dust, mildew, acids and rust. CLEARSEAL'S new modern plant assures you a prompt and efficient flow of goods. Take the CLEARSEAL way to finer packaging! Write or telephone.

Clearseal

A DISTINGUISHED NAME IN PLASTIC COATINGS
EXCLUSIVE PROCESSES THE PROPERTY OF

CLEAVELAND
LABORATORIES AND MANUFACTURING CO.

Pioneers in the application of Plastic Coatings to Textiles and Paper
Peapack, New Jersey — 7905 Empire State Building

SOLE DISTRIBUTOR
NATIONAL COATED PRODUCTS COMPANY
40 Worth St., New York (13) — Tel. REctor 2-5446

Heighten Sales Appeal of your Plastic or Glass Packages with . . .

Artistic Printing

Skilled in the swift solution of intricate printing problems, we are adept at printing on cylindrical and odd-shaped surfaces. We invite your consultation on work in any quantity, large volume preferred.

COME TO US, TOO,
FOR COMMERCIAL DECORATING
OTHER THAN PRINTING

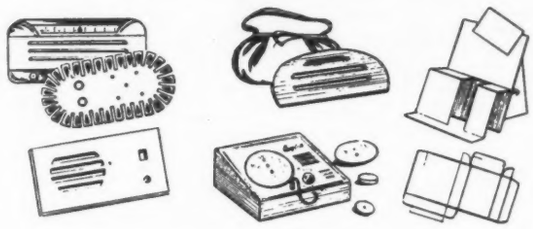
Verne Gilbert, INC.
523 WEST 45TH STREET, NEW YORK 19, N. Y.
Phone: CI 6-4233

LANSKY DIECUTTING CO.
STEEL RULE DIES · DIECUTTING · EMBOSSING · DISPLAY MOUNTING · FINISHING

WE DIE CUT

PAPER • CARDBOARD
RUBBER • SHEET PLASTICS
TEK-WOOD • THIN METALS

We Specialize in Heavy Diecutting:



FOR THESE INDUSTRIES
RADIO • TOYS • PRINTING
LEATHER GOODS
ADVERTISING • PLASTICS
ELECTRICAL • BOX • GASKET

TWENTY YEARS OF SATISFIED CUSTOMERS

LANSKY DIECUTTING CO.
196 GREENE STREET, NEW YORK 12, N. Y.

IF IT'S DIECUT SEE **LANSKY**

RIBBON BOWS
BY
Parfait

Fine perfumes and cosmetics deserve "The Crowning Touch" . . . the ultimate in smart Packaging.

To lend "The Crowning Touch" to your package, Parfait offers

Sales Promotion thru Package Decoration

RIBBON BOWS • FABRIC NOVELTIES •
ARTIFICIAL FLOWERS • DISPLAY MATERIALS

Parfait *Promotional Packaging Company*
270 WEST 38th ST., NEW YORK 18, N.Y.
LOngacre 5-0796

WANTED IMMEDIATELY:

Used Production Laminating Equipment consisting of direct—reverse or Rotogravure coater—steam heated drying oven and steel to steel or steel to rubber combining unit. Width 30" to 60".

Also Roto-Gravure Printing Press to print in 3 colors. Width 24".

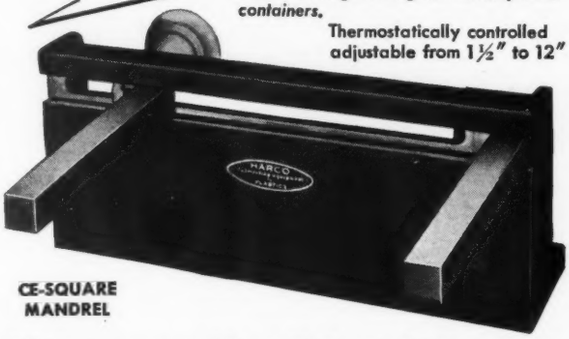
Write Box 482D, MODERN PACKAGING

NEW

FABRICATING EQUIPMENT FOR PLASTICS

For cementing rectangular thermoplastic containers.

Thermostatically controlled adjustable from 1½" to 12"



CE-SQUARE MANDREL

Whatever your problem with thermoplastic materials **HARCO** can be of assistance thru special equipment or the standard **HARCO** machines now available.

Write Today — No Obligation

WATCH FOR ANOTHER DEVELOPMENT BY HARCO NEXT MONTH

HARCO INDUSTRIES INC

118 SHADY WAY • ROCHESTER 12, N. Y.

Packaging in FOREIGN COUNTRIES

Manufacturers abroad realize that American Packaging has conquered the world. American packaging means American machinery. For a broad survey of available machinery, for timely deliveries, for adaptation to the special problems of output and interchangeable sizes, address your inquiries to us.

We have the knowledge, we have the contacts and we will give you the service that achieves results.

MILTENBERG & SAMTON, Inc.

110 EAST 42nd STREET • NEW YORK 17, N. Y.

Eye Appeal...

Attraction - power, through eye appeal, is the primary duty of any display or package.

To attract buyers for your products, your lithographed advertising must be attractive in design and color harmony. It must be seen, it must be eye-tractive.

The Sale Lithograph Company has had long and varied experience in creating and producing colorful labels, displays, box wrappers and all other types of lithographed advertising materials.

The SALE LITHOGRAPH CO.

Color Lithographers

208 WASHINGTON STREET BUFFALO 3, N. Y.

Since 1904 Devoted to the Production of Fine Lithography

LET THE RIGHT FINISH MAKE YOUR PACKAGE *a Leader*

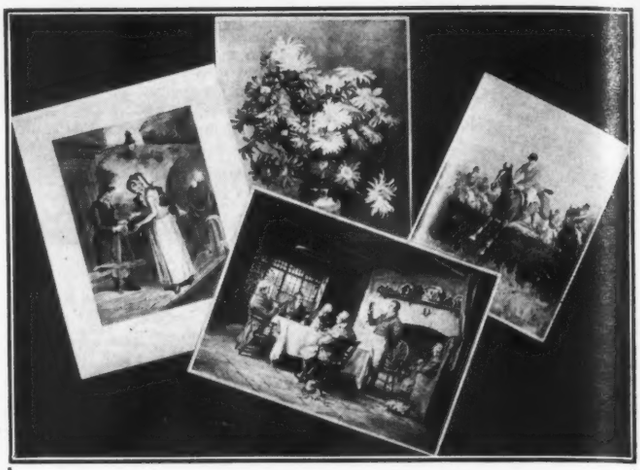
That's not double-talk. The right finish is important to your package—makes your package a leader in the competitive market. The best-looking colors, the most effective designs need the sparkling richness of good coating or the distinctive charm of embossing or die-cutting. Crawford excels at making your package a work of finished art. Our special process, "LUSTRALITE", provides the premier coating for gloss and protection.

- Lustralite
- Varnishing
- Lacquering
- Gumming
- Die-cutting
- Embossing
- Punching
- Straight Cutting
- Paraffining

ESTABLISHED 1859

JOHN W. CRAWFORD CO.

160 Varick St., New York, N. Y. • WAlker 5-5473



Prints For Every Purpose

The Mansell line, imported from England, offers you the widest variety, the finest quality available in sizes from 2½" x 3½" to 12" x 16". No matter what your print need, this comprehensive line will supply the answer and we will be glad to discuss any particular problem you have.

A. VIVIAN MANSELL & CO. Ltd., of London
Exclusive Representatives in U. S.

Milton A. Bleier

230 FIFTH AVENUE • N. Y. 1, N. Y., • MUrray Hill 5-0746

SEABOARD
HANDLES EVERY PHASE OF PACKAGING--
Dry Products and Liquid

Seaboard handles the packaging of both dry and liquid products from planning to actual shipment. We have the facilities for such products as INSECTICIDES, CHEMICALS, HOUSEHOLD PRODUCTS, ANTISEPTIC CHEMICALS in all types of containers—bags, jars, bottles, cans, canisters, and perform all types of operations—filling, weighing, mixing, labeling.

SOME SPECIAL SEABOARD SERVICES

We Can:
- Compound chemicals for you
- Help in the development of your own personalized package
- Assist you in obtaining packaging materials
- Make drop shipments to all parts of the country

See Seaboard for any phase of your packaging job.

SEABOARD MFG. LABS. INC.
Tulip & Dauphin Sts. Philadelphia 25, Pa.

FOR BETTER PACKAGING

WRITE, PHONE or WIRE for Quotations on Your Requirements for

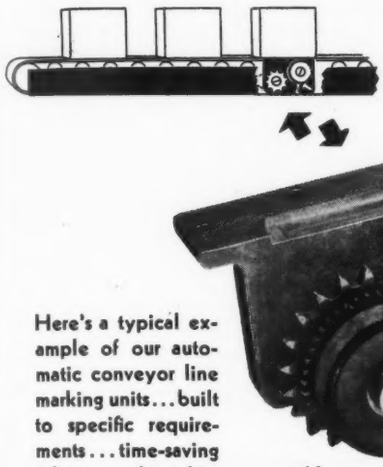
PARTITIONS

IMMEDIATE ATTENTION
Given to Requests for Estimates

Prompt Deliveries Guaranteed — *Reasonable Prices Assured*

PETER PARTITION CORP.
Manufacturers of Partitions for Paper Boxes
647-649 LEXINGTON AVE. BROOKLYN 21, N. Y.
Telephone: FOxcroft 9-2129

WE HAVE IT . . . OR WE'LL BUILD IT . . .
A CONVEYOR LINE MARKING UNIT TO SOLVE YOUR PROBLEM

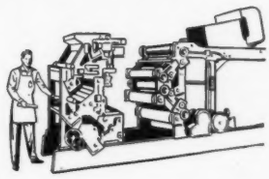


Here's a typical example of our automatic conveyor line marking units . . . built to specific requirements . . . time-saving adjustment for inking . . . quickly removable printing and inking rolls . . . uses the convenient, efficient, fool-proof Base-Lock Rubber Type.

WM. A. FORCE & COMPANY
INCORPORATED

107 Worth Street, New York 13, N. Y.
3000 W. Chicago Ave., Chicago 22, Ill.
682 Mission St., San Francisco 5, Calif.
3652 Northcliffe Ave., Montreal 28, Can.

WANTED
Long Runs of 4 to 6 Color
PRINTING



DAY after day, for more than eight consecutive years, Hess & Barker's four to six color rotary printing presses, have with ease and in perfect register, delivered millions and millions of fine printing impressions.

Two Hess & Barker Rotary Presses in one plant operated year after year, without a single breakdown.

And the specially designed teeth in the cylinder and bull gears, after printing all these millions of impressions, are now in perfect condition.

One pressman in this plant when asked, "What do you think of Hess & Barker's press," said: "These babies can really take it."

And they can, because Hess & Barker's press is designed and built to run trouble free.

The oscillating rollers are not synchronized, assuring perfect ink distribution to all the form rollers. That is why you get the very maximum coverage from whatever grade ink is used.

The plate cylinders are made of solid forged steel. That greatly reduces plate fatigue.

The full view ink fountains are micrometer controlled and can easily be adjusted while the press is running.

Hydraulic rewind is automatic maintaining the exact tension on the web at slow or high speeds.

Cylinder and bull gear teeth are specially designed which eliminates all lost motion, insuring perfect register at high or low speeds, on glassine paper or stock of 240 lb. basis.

The entire press is precision built to last a long, long time and 100% hairline register is guaranteed.

If you have the 4 to 6 color printing to keep a Hess & Barker rotary printing press busy, you can make a handsome profit on your investment.

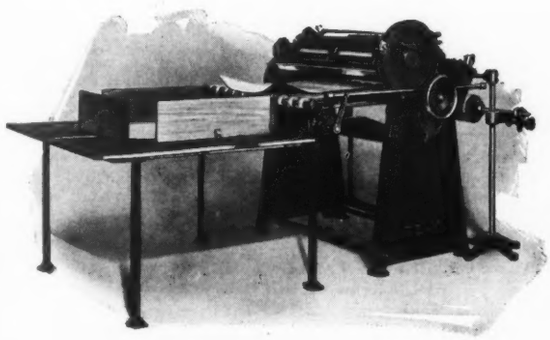
Write or telephone today and an hour convenient to you will be arranged when the capacity of Hess & Barker's 4 to 6 color rotary printing press will be demonstrated to you.

A full color booklet will be mailed FREE on request

HESS & BARKER
PRINTING PRESS & EQUIPMENT MANUFACTURERS
212-22 S. Darien St., Phila. 7, Pa.
Phone PEnnypacker 5-4070

OVER 1000 BECK SHEET CUTTERS

have been sold to lick the "cost thief" in cutting into sheets all kinds of transparent papers and other packaging materials. Particularly are the **"ELECTRONIC-EYE"** solving the sheeting problems of your competitors. Their unfailing performance for accuracy and high productions might also be the answer to your searching for profit producing equipment. May we answer your questions —NOW?



CHARLES BECK MACHINE CO.
13th & Callowhill Streets Philadelphia, Pa.

All classified advertisements payable in advance of publication. Rates: $5.00 up to sixty words, enclosed in border, $10.00 per inch.

Classified Advertisements

Publisher reserves the right to accept, reject or censor a classified copy.

3-COLOR ANILINE PRESS
Brand New—Heavy Construction—Prompt Delivery
Maximum Web—30".
Printing Width—29".
Printing Length—21½".
Registration Adjustable While Press Runs
Speed—About 300 Ft. Per Min.
Price—$5,550
F.O.B. N. Y. City
Box 486, Modern Packaging

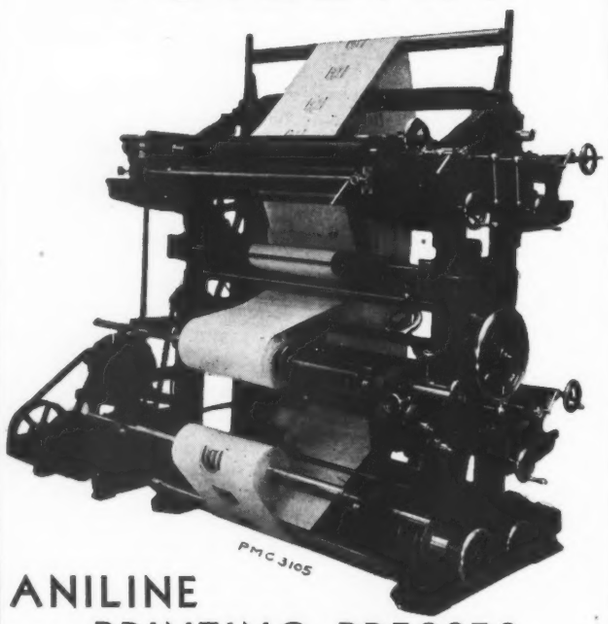
I'M YOUR MAN—Young (33) hard working seasoned salesman (College Grad.) wants paper and/or packaging line as your mfgrs. agent for New Orleans and surrounding area or status. Box 487, Modern Packaging.

CELLOPHANE BAGS FOR SALE—In excess of one million duplex cellophane bags available for immediate shipment. All grease and moisture-proof with heat-sealed bottoms and in perfect condition. Sizes 3 x 6", 3 x 8" and 4 x 6". Will dispose of all or part for less than ⅓ original cost. W. R. Caldwell Manufacturing Co., 912 Park Bldg., 104 Public Square, Cleveland 14, Ohio.

Let us sell your surplus stock of glass Containers and Closures. Clients all over the U.S.A. We can also fill your needs. Glass & Closure Exchange. Box 488, Modern Packaging.

AGENTS WANTED By Plastics Manufacturer—Advertising and display manufacturer with complete laminating, fabricating and moulding facilities desires representative outside New York City. Commission Basis, State Lines You Are Handling Now. RANGER-TENNERE, Inc., 450 West 31st St., N.Y. 1, N.Y.

POTDEVIN



PMC 3105

ANILINE
PRINTING PRESSES

Paper Bag Machines, Oil Ink Presses, Waxing, Varnishing, Gluing and Laminating Machines.

POTDEVIN MACHINE CO.
EST. 1893
1244 38TH ST. BROOKLYN 18, N. Y.

POTDEVIN

PACKAGING PLANT, extensive modern machinery, will custom pack your product for NW territory. Trackage, receiving, shipping, billing, 3 carload refrigerators. 24 inch assembly or sorting conveyor. Cello wrapping. Cello bagging. Labelling. Continuous monorail basket cooking in syrup. Vegetable wash and tray pack or bag. Confections cook and package in which we specialize. Complete premium deal servicing. Cayol Foods, 626—3rd Ave. No., Minneapolis, Minn.

PRESS MACHINIST—Fully experienced on Miehle printing and cutting presses. For mid-west division of national concern. Give full particulars as to experience, age and salary expected. Box 477, Modern Packaging.

DESIGN ENGINEER

Excellent opportunity in one of the world's largest integrated pulp, paper and bag plants for man experienced in designing light automatic equipment, preferably bag machines. Working knowledge of general maintenance and machine shop methods also desirable. Prefer man 30 to 45 years of age. Unlimited opportunities for right man. Salary negotiated. Give full particulars in letter to Employment Manager, Box 570, Savannah, Ga.

CONTAINERS FOR IMMEDIATE DELIVERY

QUANTITY	SIZE	FINISH
800 gross	1 dram novelty btls.	Cork
500 "	¼ oz. Square btls.	15 mm
3500 "	2 oz. Amber Square	24 mm C.T.
300 "	3 oz. Astoria btls.	18 mm 415
300 "	4 oz. C 39 btls.	20 mm 415
300 "	4½ oz. Panel btls. (sp.)	15 mm 415
125 "	5 oz. Butterfly btls.	20 mm 400

GLASS CONTAINER & CAP OUTLET CO. 876 BROADWAY, NEW YORK 3, N.Y., Gramercy 7-5080

EXECUTIVE PILOT—TRANSPARENCY SALESMAN. Knows fruit and produce packaging and shipping problems, also air freight. Five years successful sales. Two years processed food sales. Two years transparent packaging sales. Five years U.S. Army.
Well rounded flying experience. Over twenty-five hundred accident-free hours. Twelve hundred hours multi-engine time. Commercial license, Instrument rating, Instructors rating, Class II Radio- telephone. Reply Box 490, Modern Packaging.

SALESMAN

Lamination of plastics, paper and foils; protective and decorative; packaging. Large, well established concern in N. Y. City area.

Write Box 483, Suite 617, 1457 Broadway, N. Y. City

FOR SALE—SIMPLEX BAG MACHINE, Electric Eye Control Slightly used—1945 Model, SHUMANN EQUIPMENT COMPANY, 1200 E. Carson Street, Pittsburgh 3, Pa.

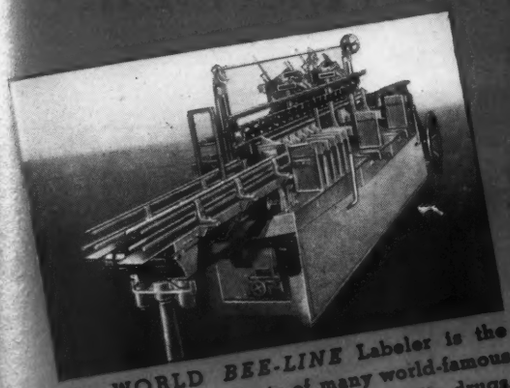
SALES EXECUTIVE, AGE 42
AVAILABLE AFTER FEBRUARY 1st

Successful record past 15 years with large carton mfr. Fully capable take complete charge all phases. Wide personal acquaintance. National clientele. Box 484, Modern Packaging.

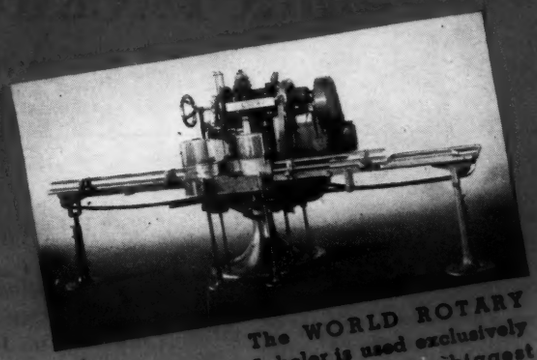
YOUNG PACKAGING ENGINEER, with broad experience in sales and research, and well acquainted with all phases of protective food packaging desires responsible position in either the food or converting industries. Box 485, Modern Packaging.

BOW MAKING MACHINES WANTED. We are interested in a practical machine to tie small, narrow Ribbon Bows. Please write full details. Box 489, Modern Packaging.

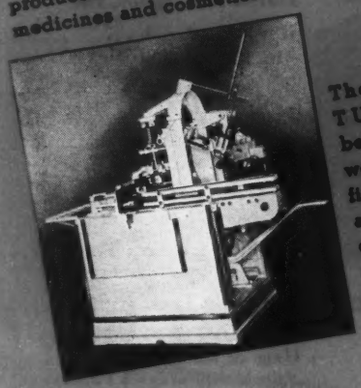
SALES REPRESENTATIVES WANTED in various territories by Rotogravure house specializing in high class out-of-the-ordinary printing, coating, and laminating of any material in rolls from one quarter inch upwards in multicolor. Especially well equipped for work in plastics with modern machines and fine technical experience. Write, stating references. Box 491, Modern Packaging.



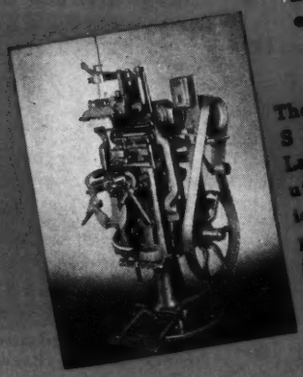
The WORLD *BEE-LINE* Labeler is the standard in the plants of many world-famous producers of food, condiments, spirits, drugs, medicines and cosmetics.



The WORLD ROTARY Labeler is used exclusively by many of the biggest names in the brewery, beverage and food industries.



The WORLD TURRET Labeler is doing work of superfine quality for a wide variety of producers of nationally known brands.



The WORLD MODEL S SEMI-AUTOMATIC Labeler has a range of utility that makes it ideal for countless applications calling for frequent changes of containers and labels.

WORLD LABELERS

Cover A World Of Labeling Applications Including Yours

Whatever your product, your production, your size and shape of glass container, and size and location of labels—it's good business and good economics to see what WORLD labeling headquarters recommends for the job.

Why? Because only WORLD builds and applies *every* type and size of Labeler for glass. WORLD engineers are able to recommend the *one best* Labeler for you, without prejudice. All we need is a few samples of your containers and labels.

"YOU GET THE BEST LABELERS IN THE WORLD"

ECONOMIC MACHINERY COMPANY

Builders of World Automatic and Semi-Automatic Labelers for Every Purpose

WORCESTER, MASSACHUSETTS

New York Philadelphia Pittsburgh Chicago San Francisco Denver
Louisville Salt Lake City El Paso Seattle Portland Phoenix London
Montreal Toronto Winnipeg Newfoundland Vancouver Mexico City
Sydney, Australia Wellington, N.Z. San Juan, P.R. Cuidad, Trujillo. D.R.

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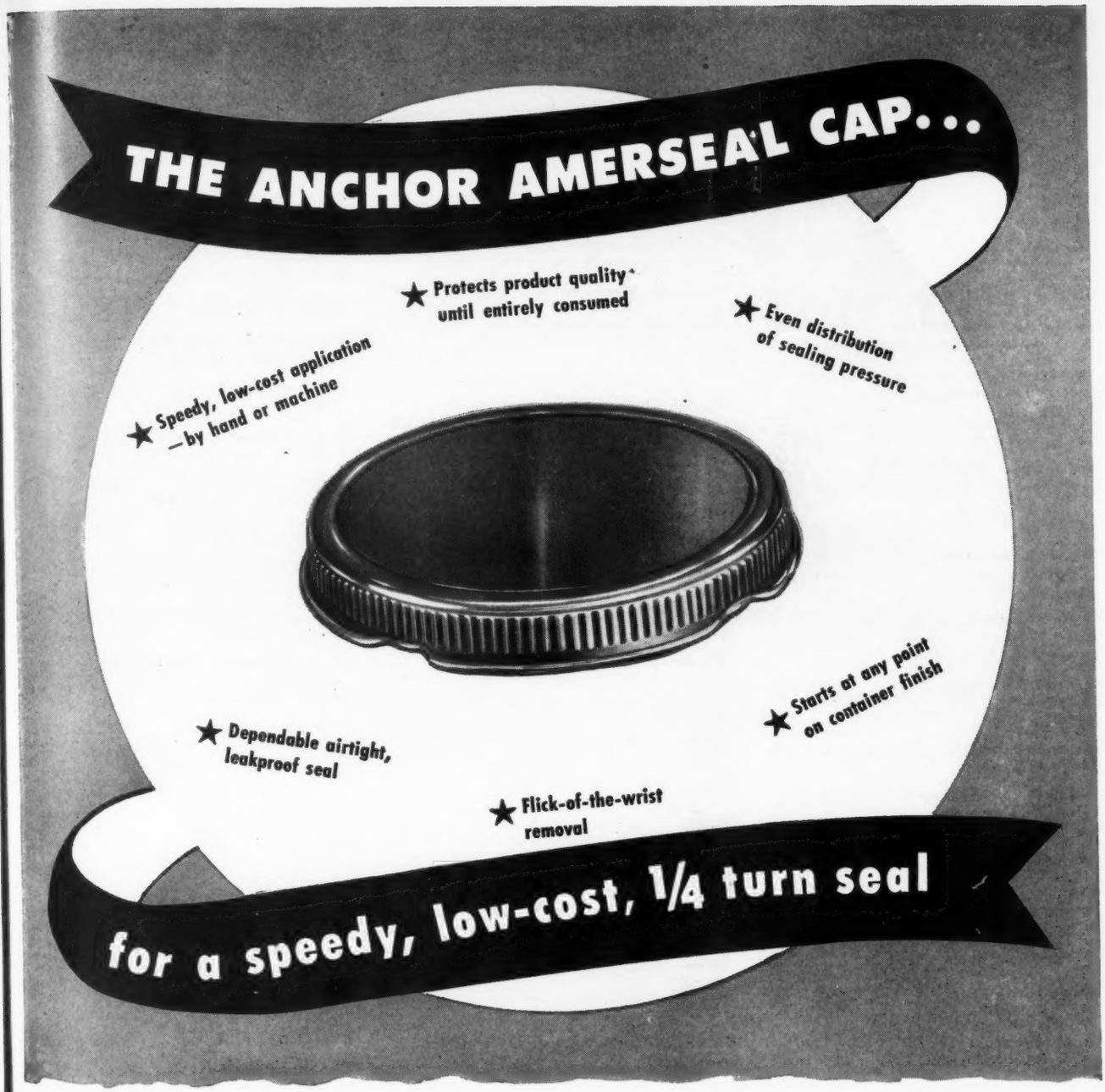
THE ANCHOR AMERSEAL CAP...
★ Protects product quality until entirely consumed
★ Even distribution of sealing pressure
★ Speedy, low-cost application —by hand or machine
★ Starts at any point on container finish
★ Dependable airtight, leakproof seal
★ Flick-of-the-wrist removal
for a speedy, low-cost, 1/4 turn seal

THE Anchor Amerseal Cap starts at any point on the container finish. Then it's the simple ¼ *turn* that permits easy application, speeds up production, reduces costs.

And this cap gives your products a dependable airtight, leakproof seal because it exerts a uniform sealing pressure around the full 360 degrees of the container finish. Its equally-spaced, scientifically-designed lugs engage the *underside* of the glass threads and draw the cap down, compressing the liner into a tight, even seal.

The Anchor Amerseal Cap offers the ultimate in convenience to the consumer with its flick-of-the-wrist removal and reseal. A ¼ turn and it's off—a ¼ turn and it's on again — sealing as effectively the hundredth time as the first.

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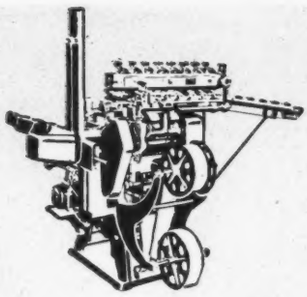
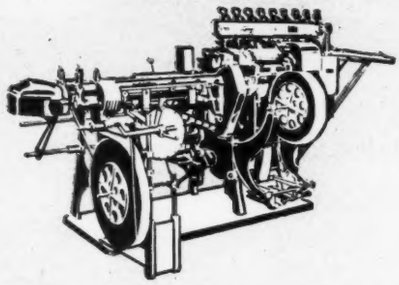


WRAP-O-MATIC model RA

Wrap-O-Matic model RA is designed for wrapping single irregular shaped products delivered on an enrober or conveyor belt to the operator feeding the machine.



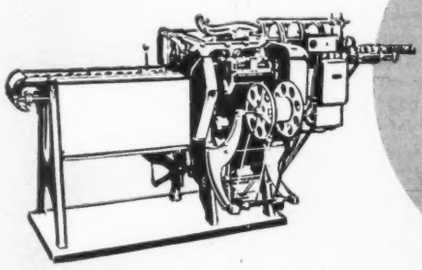
WRAP-O-MATIC model PB

Wrap-O-Matic model PB is designed for wrapping single or multiple piece, fragile or irregular shaped products delivered on trays or trucks to the operator feeding the machine.

You Profit 8 Ways with — WRAP-O-MATIC wrapping

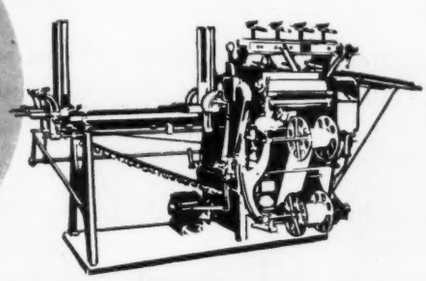
1 Save as much as 75% in wrapping labor. 2 Save up to 35% in wrapping material 3 Get high speed production 4 Wrap fragile or irregular shaped products with ease. 5 Use any type wrapper that can be printed in rolls. 6 Extra sales appeal . . . Neat, trim, uniform sealed packages with positive label registration. 7 Full product view . . . eliminates use of collars, trays and other protective materials. 8 Multiple piece products wrapped with automatic belt feed or multiple stack magazine feeders.

Learn more about Wrap-O-Matic . . . Upon receipt of samples of your products, detailed information can be furnished as to model required, probable speed, cost, delivery, etc. Plan now to profit with Wrap-O-Matic wrapping.



WRAP-O-MATIC model SW

Wrap-O-Matic model SW is especially designed for wrapping crackers, wafer sandwiches, cookies, peanut butters, etc., in one stack without the use of collars, trays or cardboard stiffeners.



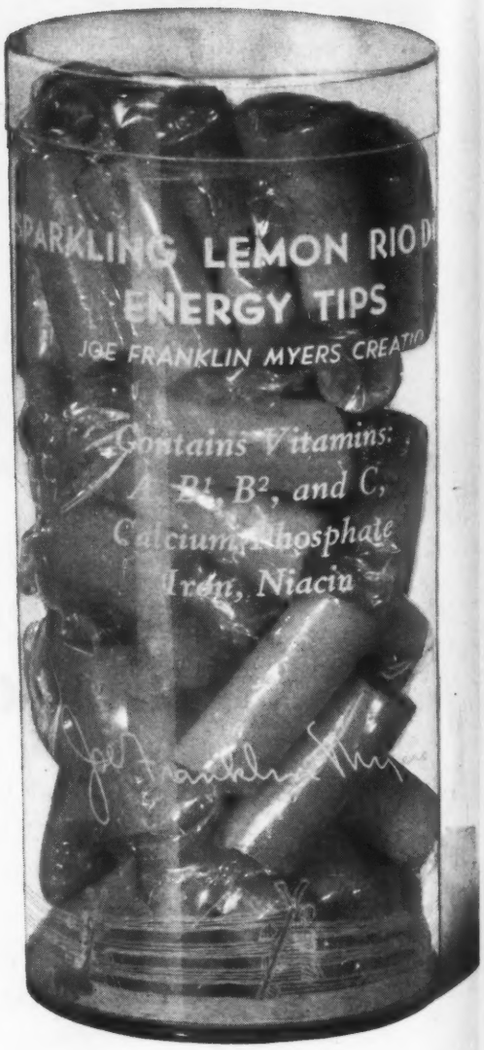
WRAP-O-MATIC model LPB

Wrap-O-Matic model LPB is designed for wrapping large size candy bars, multiple stacks of biscuits, cookies, crackers, also jelly rolls, flips, cup cakes and other bakery products on a cardboard base or boat.

Lynch Package Machinery Corporation

TOLEDO 1, OHIO, U. S. A.

switched to VUEPAK



sales up 300%

Here's another Vuepak "success story":

Joe Franklin Myers, of Dallas, Texas, world famous for unusual confections, did a brisk business on his "Liquor Tips" in the attractive, deluxe package at the left above (8 oz. for 60c).

BUT, when he switched to a "showcase" of rigid transparent Vuepak that showed off and protected "Liquor Tips" taste appeal . . . the new full-view package outsold the former 3 to 1 at 7 oz. for 75c!

If you have a product with taste appeal, eye appeal, interesting design, texture or freshness . . . if it's worth looking at . . . don't hide it in a "blind" package, put it in Vuepak.

Your box supplier can give you Vuepak facts . . . or write direct: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield 2, Massachusetts.

Vuepak: Reg. U. S. Pat. Off.

QUESTIONS AND ANSWERS ON VUEPAK

1. What is Vuepak? Vuepak is a transparent, tough rigid, beautiful Monsanto cellulose acetate.
2. In what form is Vuepak available? In sheets up to 30" wide, and in continuous rolls 30" wide up to 1000' long, in thicknesses up to .015". Available in .020" thickness in rolls with unit finish or in 20" x 50" press polished sheets.
3. In what thicknesses is it ordinarily available? In six standard gauges 0.005" to 0.020".
4. Does sunlight affect it? No.
5. Is it affected by heat? Not under ordinary temperatures. It begins to soften after 200° F. Underwriters' Laboratories classification, "slow burning."
6. How can it be fabricated? It can be drawn, shaped, formed or folded into almost any shape with inexpensive dies. It can be embossed, stapled, printed, cemented, or combined with other materials.

See Monsanto packaging ideas . . . Packaging Exposition, Philadelphia, Pa., April 8-11.

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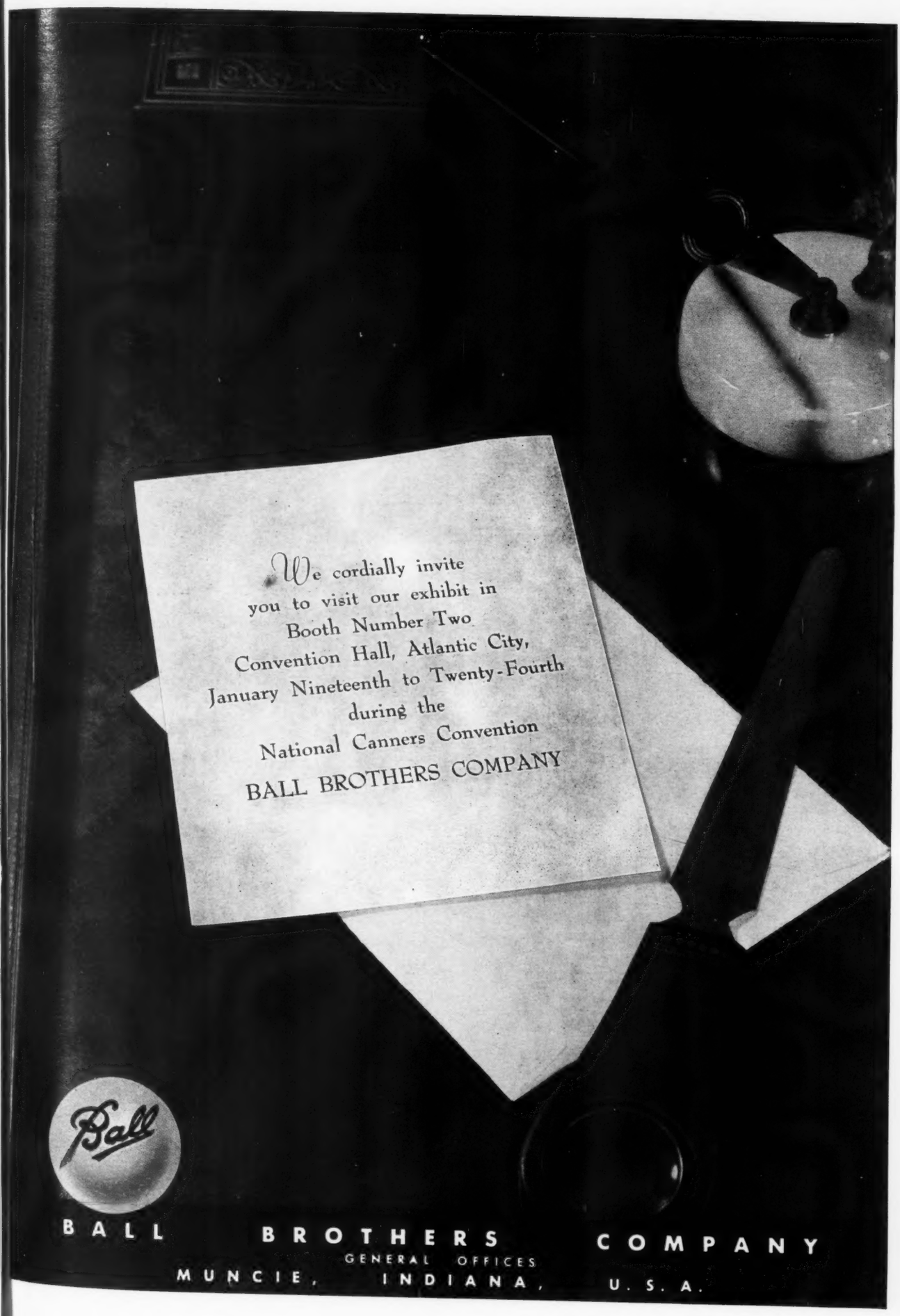
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